

DUAL INDUCTION LOG

Company MTM PETROLEUM, INC.
 Well HUFFORD #2-23
 Field SPIVEY-GRABS-BASIL
 County KINGMAN
 State KANSAS

Company MTM PETROLEUM, INC.
 Well HUFFORD #2-23
 Field SPIVEY-GRABS-BASIL
 County KINGMAN State KANSAS

Location: API # : 15-095-22317-00-00
 1400' FSL & 770' FEL
 SEC 23 TWP 30S RGE 7W
 Permanent Datum GROUND LEVEL Elevation 1503'
 Log Measured From KELLY BUSHING 8' A.G.L.
 Drilling Measured From KELLY BUSHING
 Other Services CDL/CNL/MEL
 Elevation K.B. 1511'
 D.F. 1509
 G.L. 1503

Date	12/10/17
Run Number	ONE
Depth Driller	4325
Depth Logger	4330
Bottom Logged Interval	4328
Top Log Interval	00
Casing Driller	8 5/8" @ 221
Casing Logger	221
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.3/55
pH / Fluid Loss	10.0/10.4
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.80@48
Rmt @ Meas. Temp	.60@48
Rmc @ Meas. Temp	.96@48
Source of Rmf / Rmc	MEASURED
Rm @ BHT	.32@119
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	///
Maximum Recorded Temperature	119F
Equipment Number	4010
Location	HAYS, KANSAS
Recorded By	GUS PFANENSTIEL
Witnessed By	JERRY A. SMITH
	MARVIN A. MILLER

<<< 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
 RAGO SOUTH 2 MILES, EAST 2 MILES,
 SOUTH INTO.



MAIN PASS

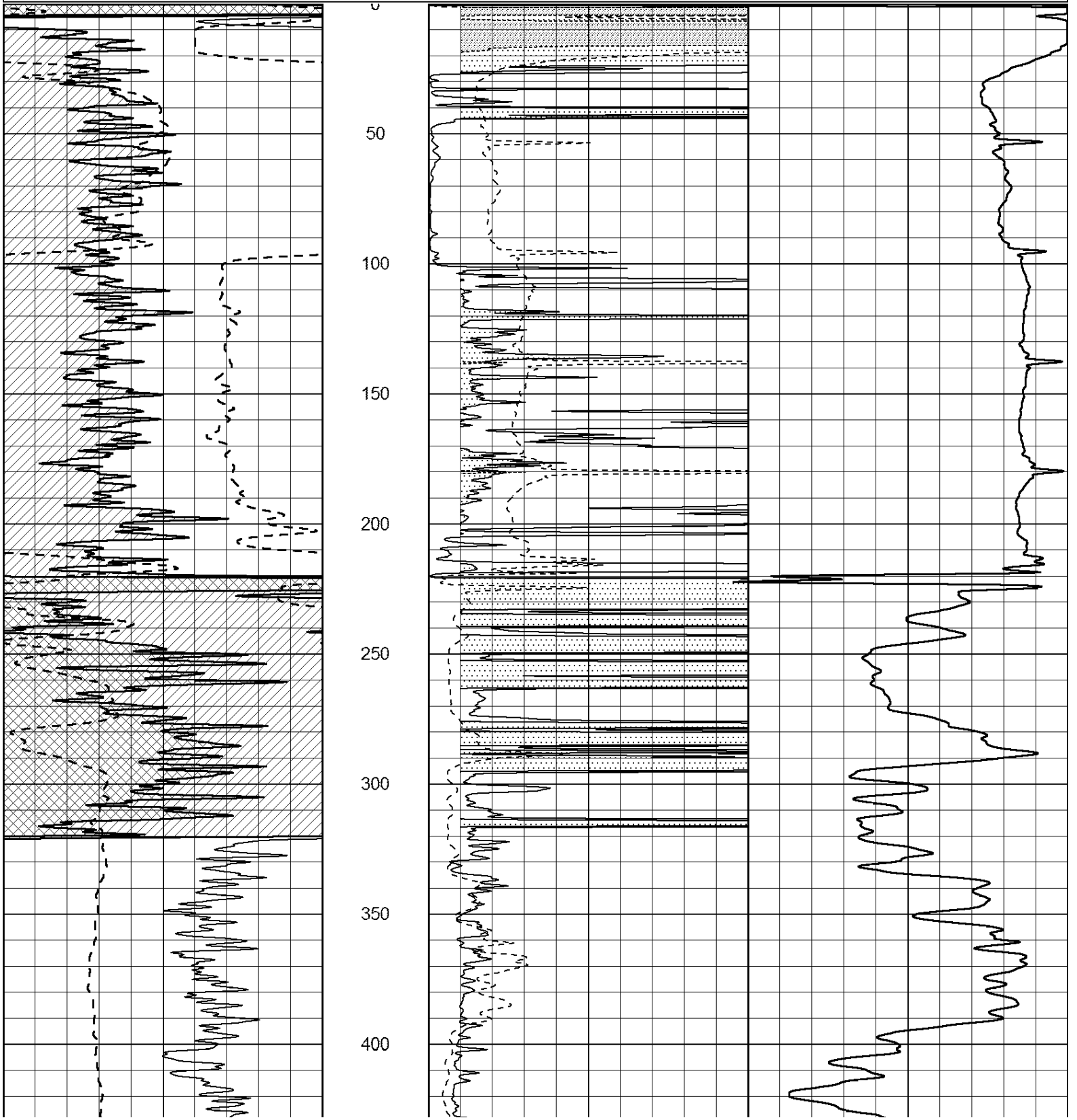
Database File: 2116ddn.db
 Dataset Pathname: pass3.1
 Presentation Format: _dil2
 Dataset Creation: Sun Dec 10 08:14:32 2017 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:600

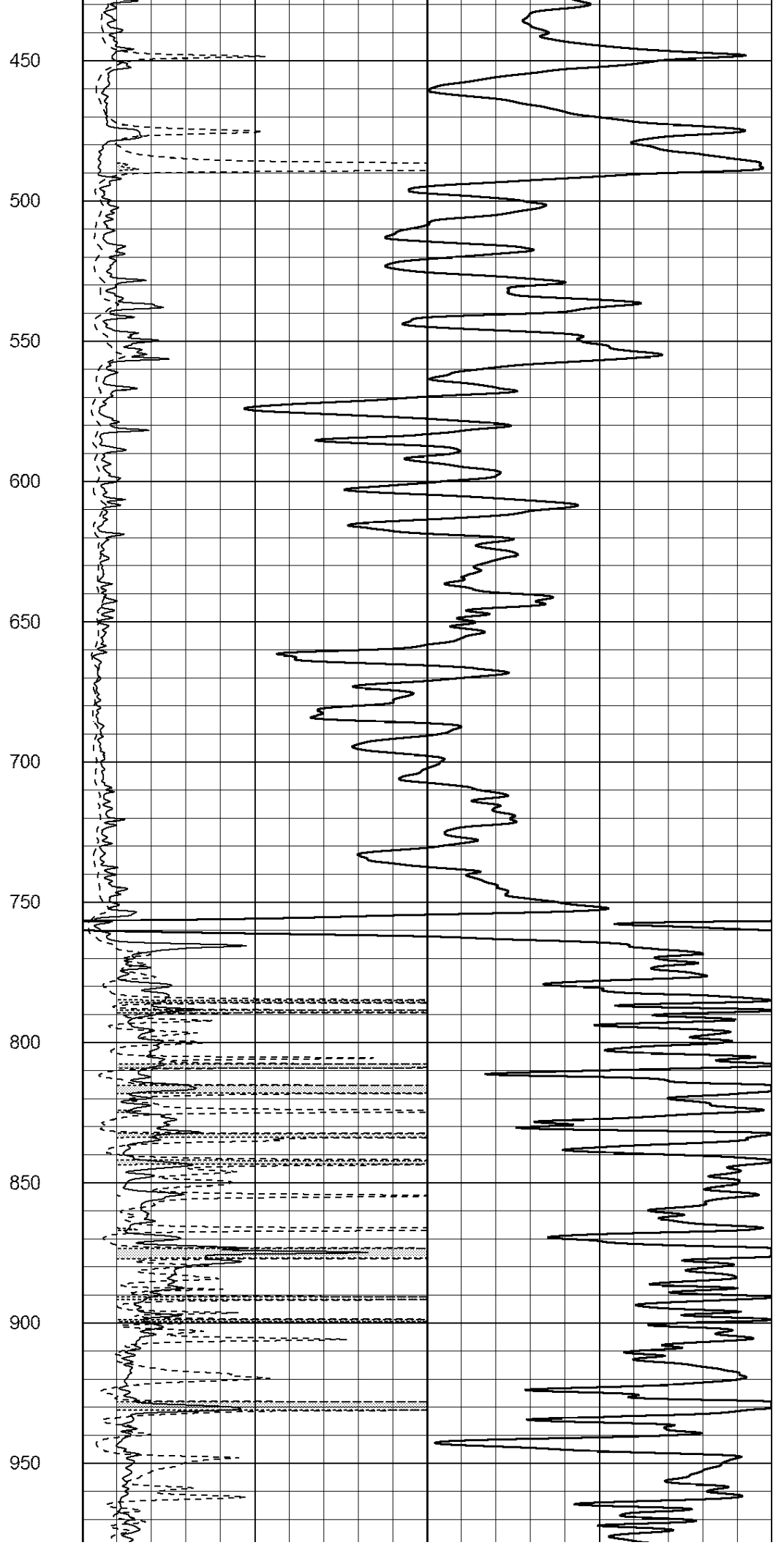
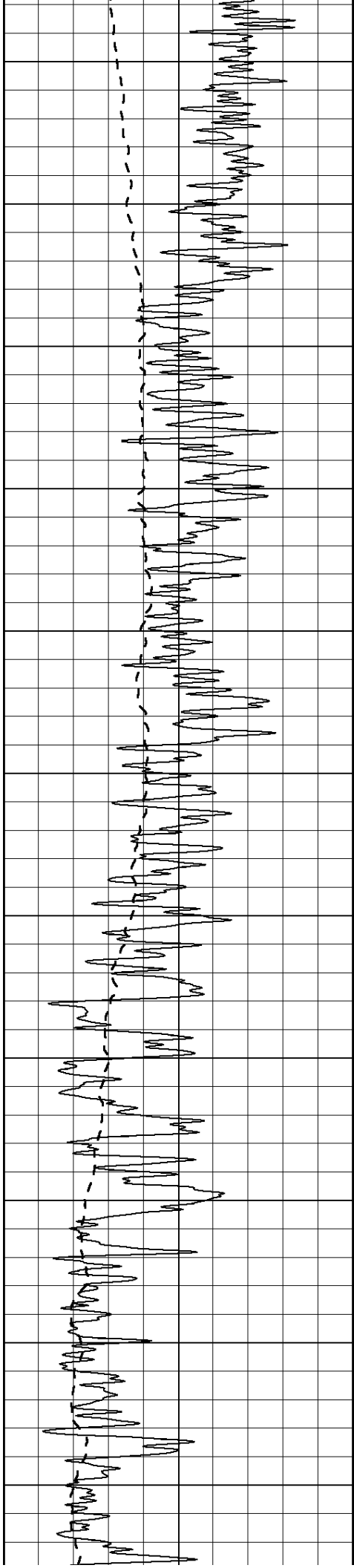
0	Gamma Ray (GAPI)	150
-100	SP (mV)	100

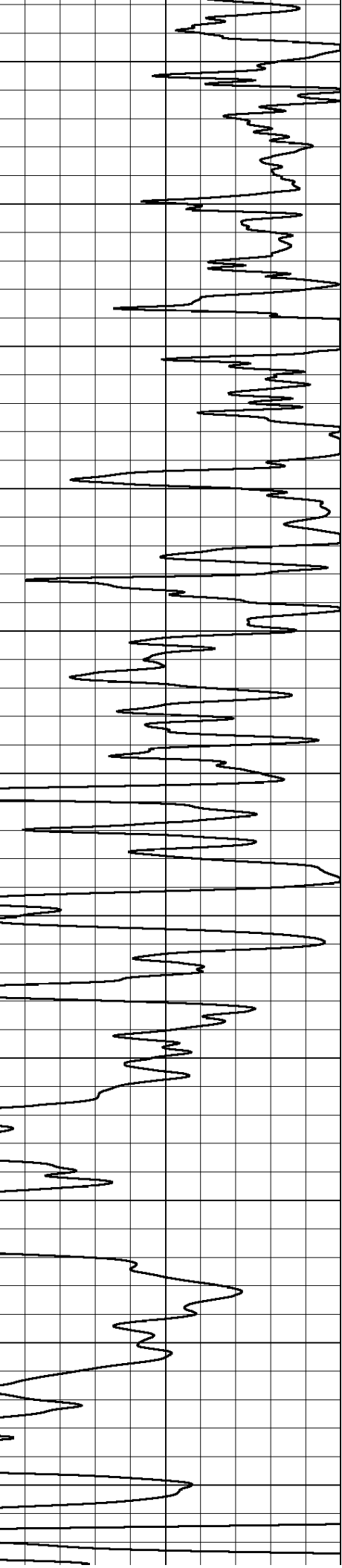
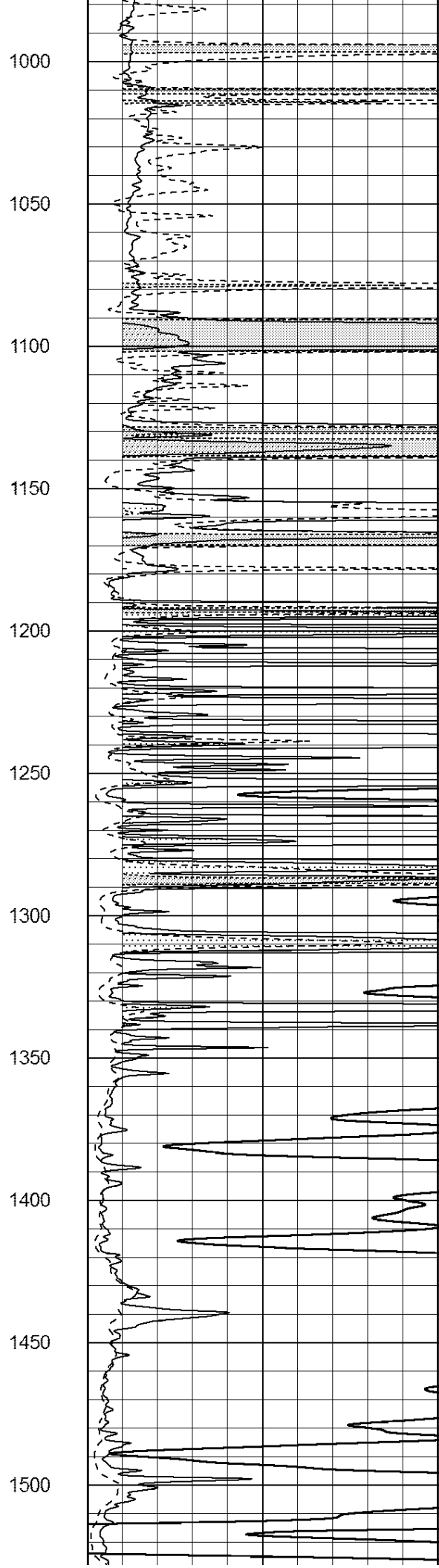
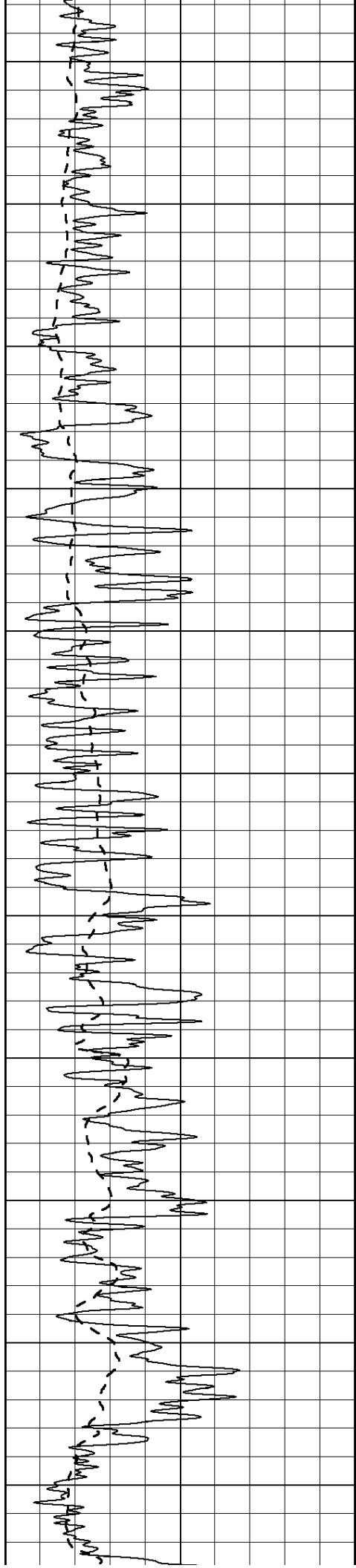
0	RLL3 (Ohm-m)	50
0	RILD (Ohm-m)	50

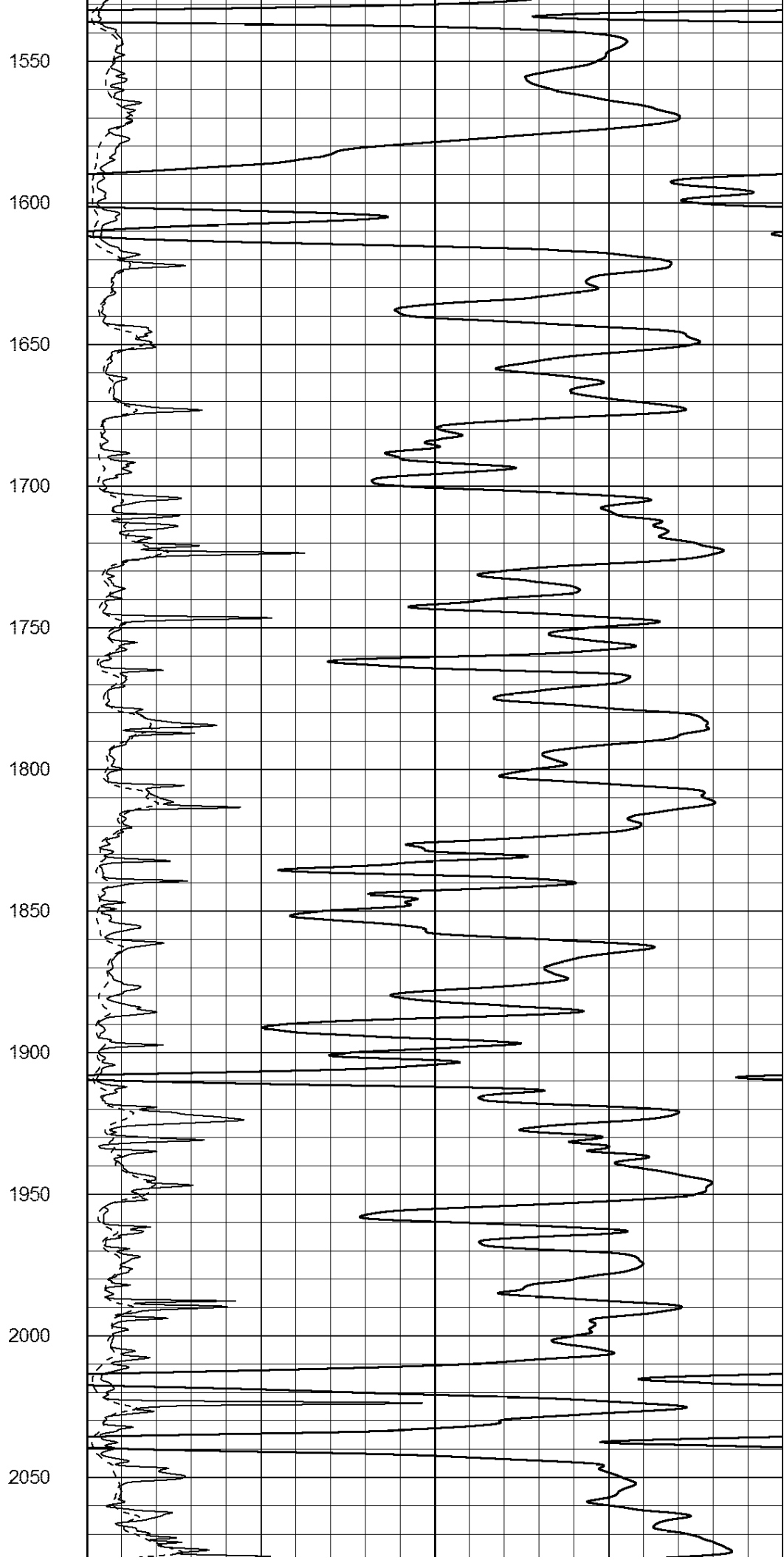
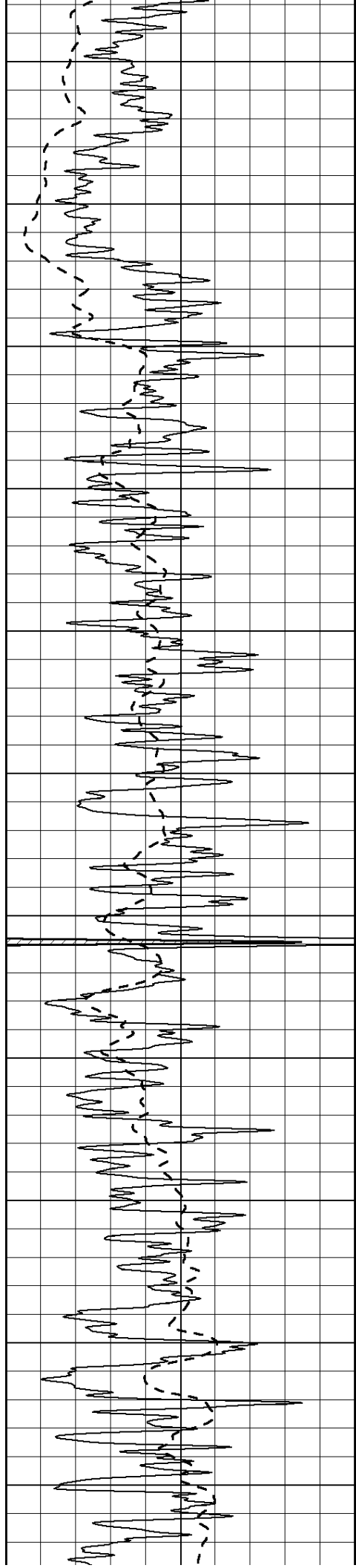
1000	CILD (mmho/m)	0
------	---------------	---

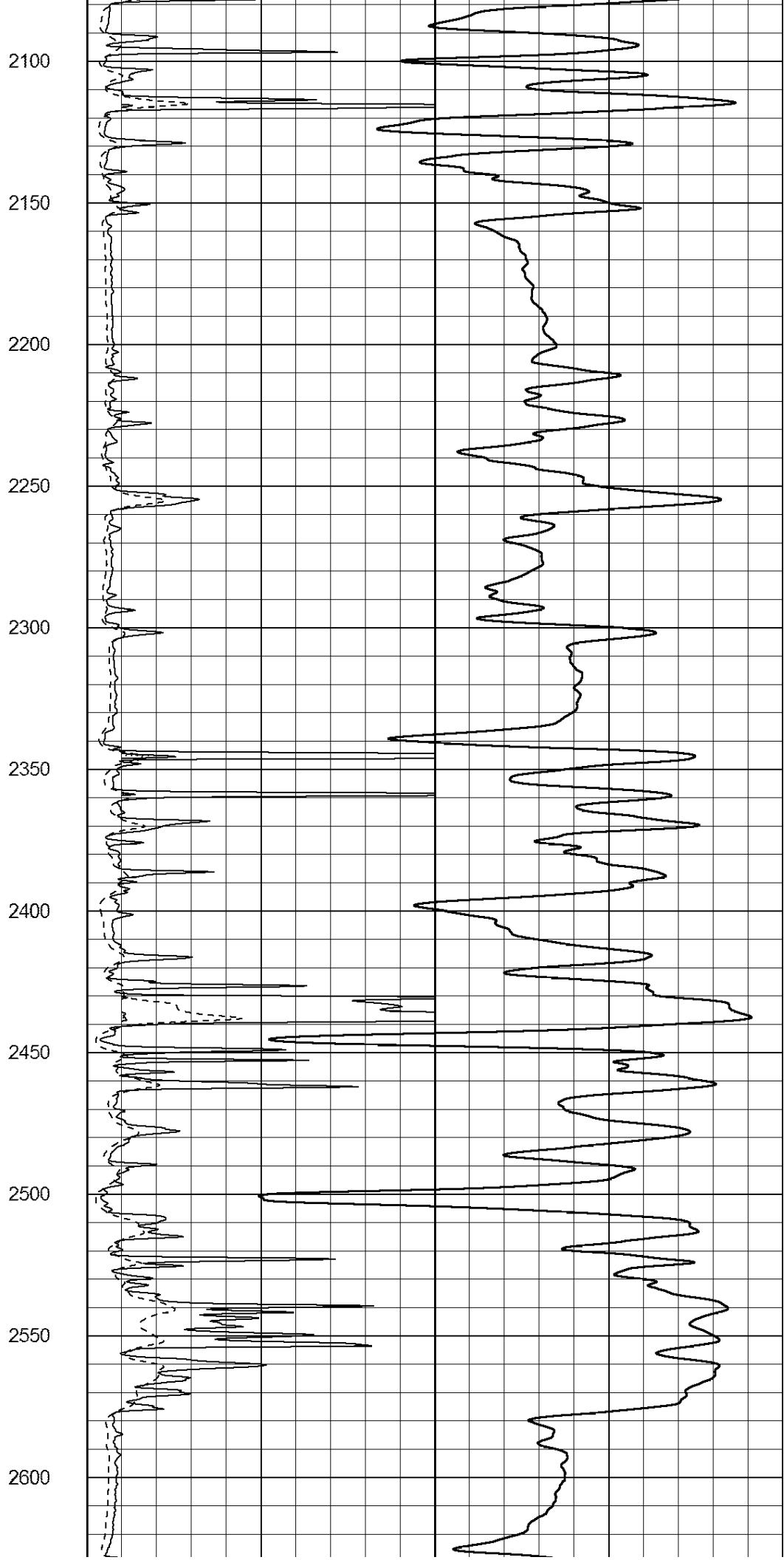
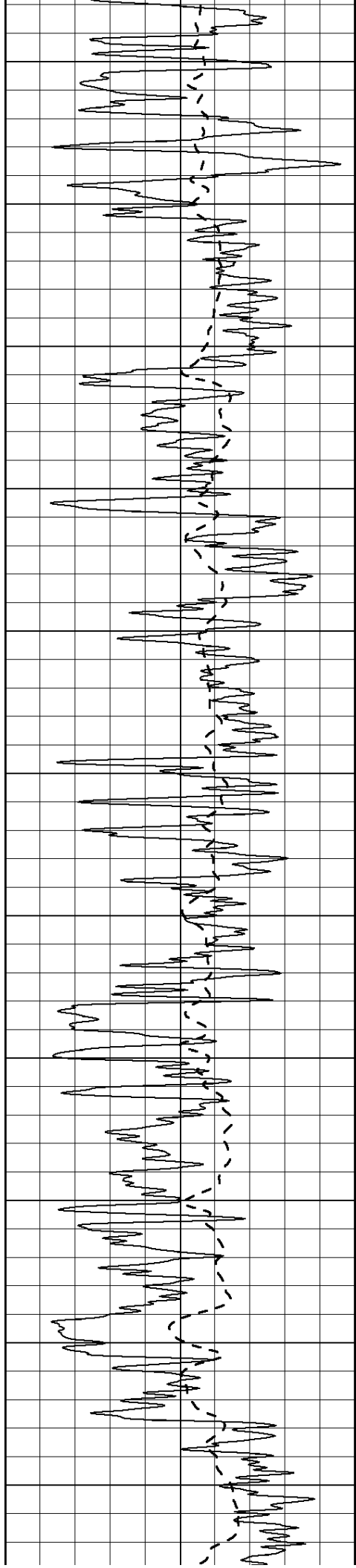
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

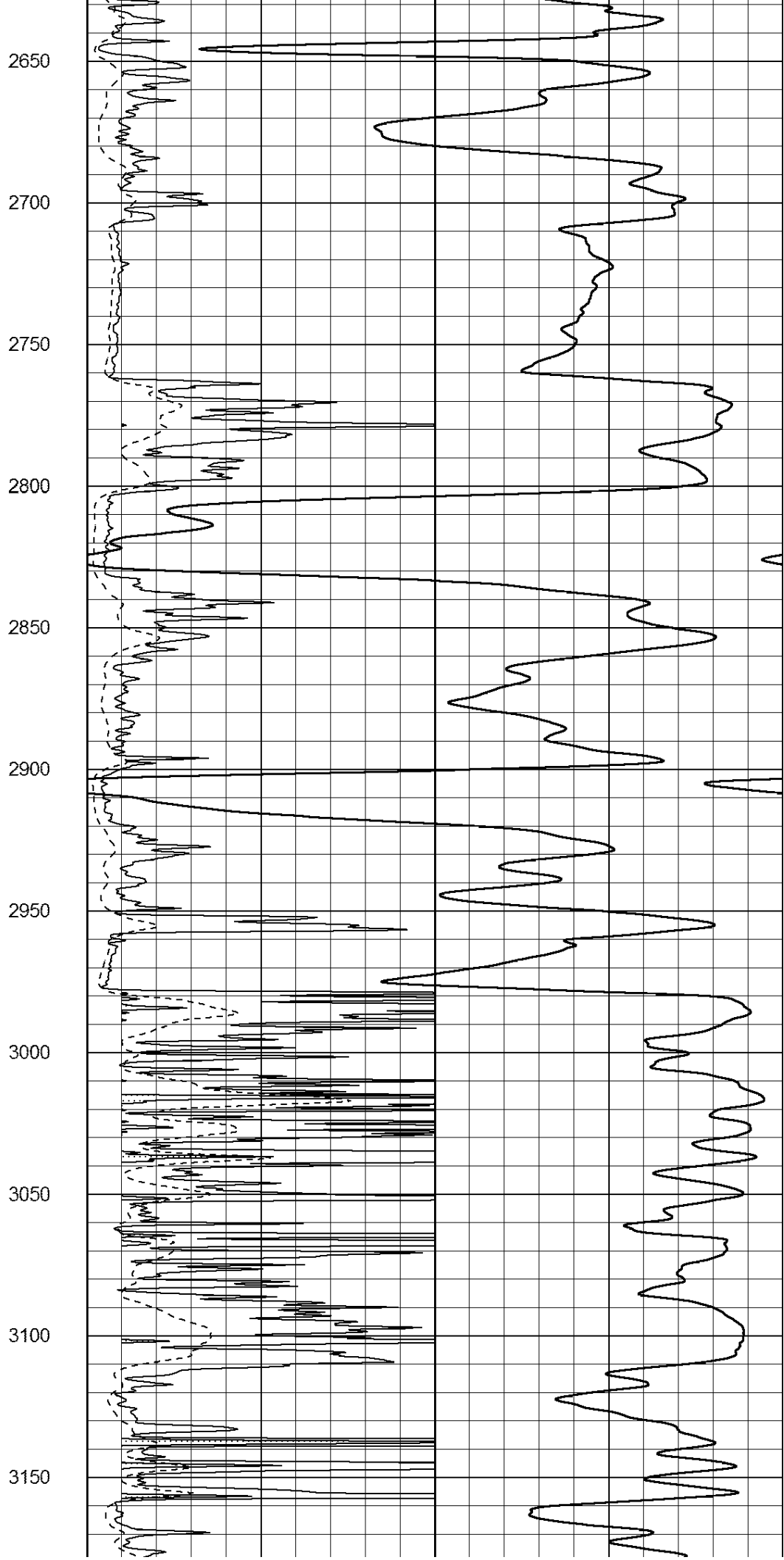
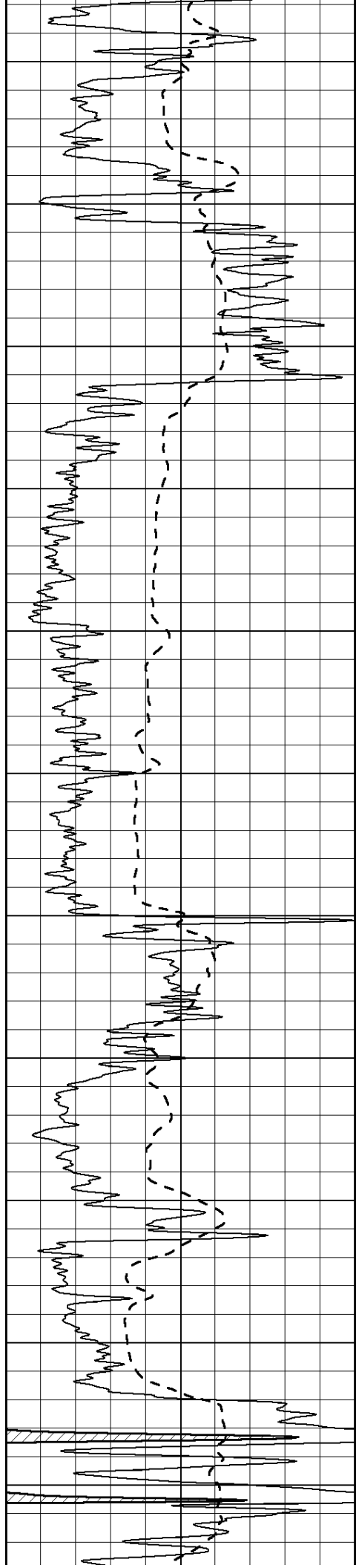


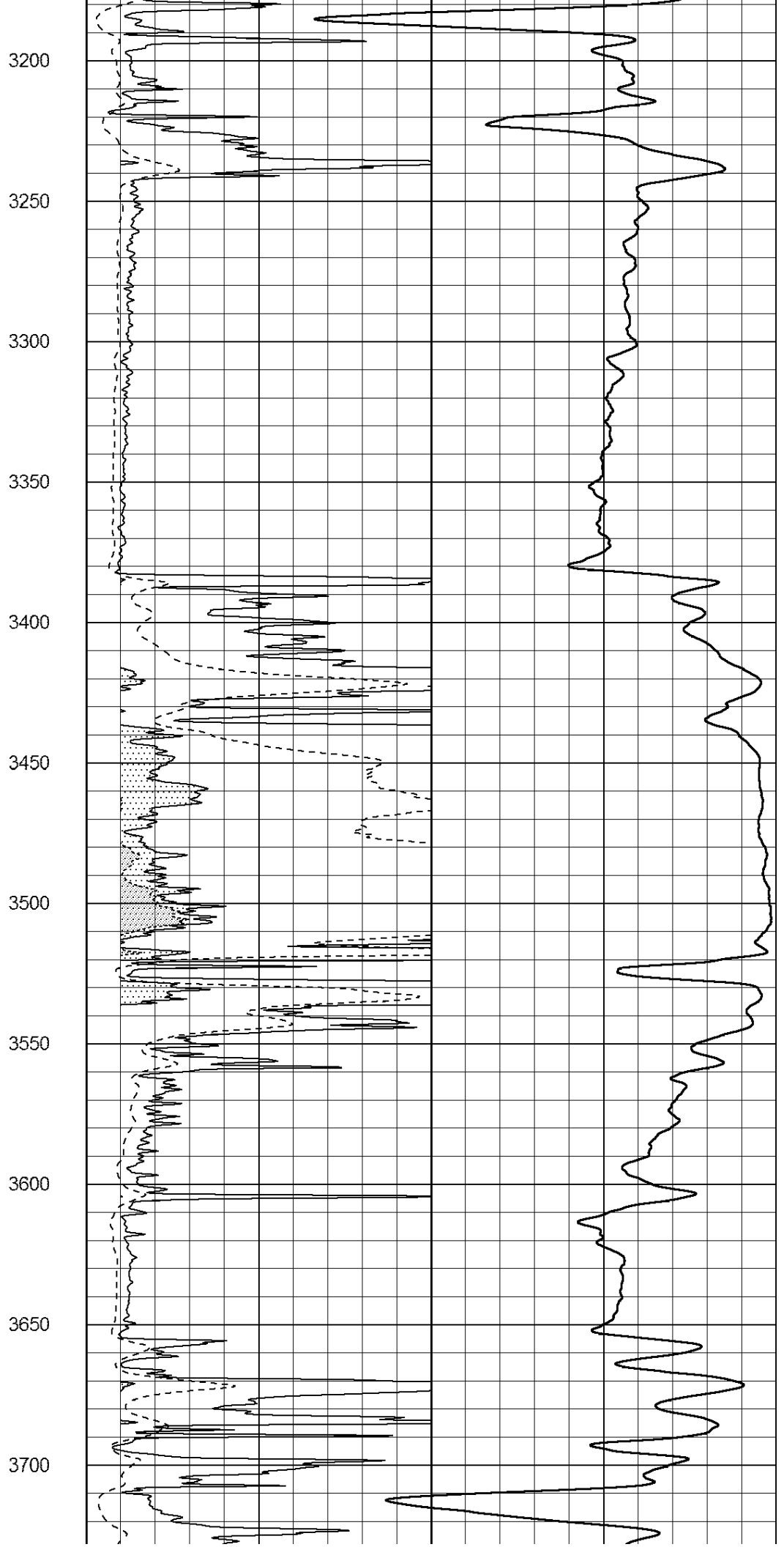
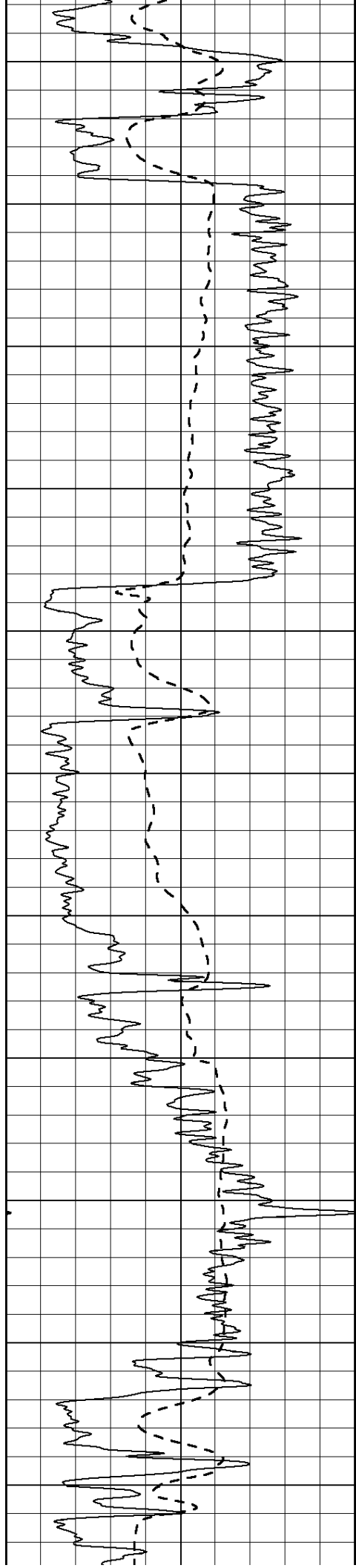


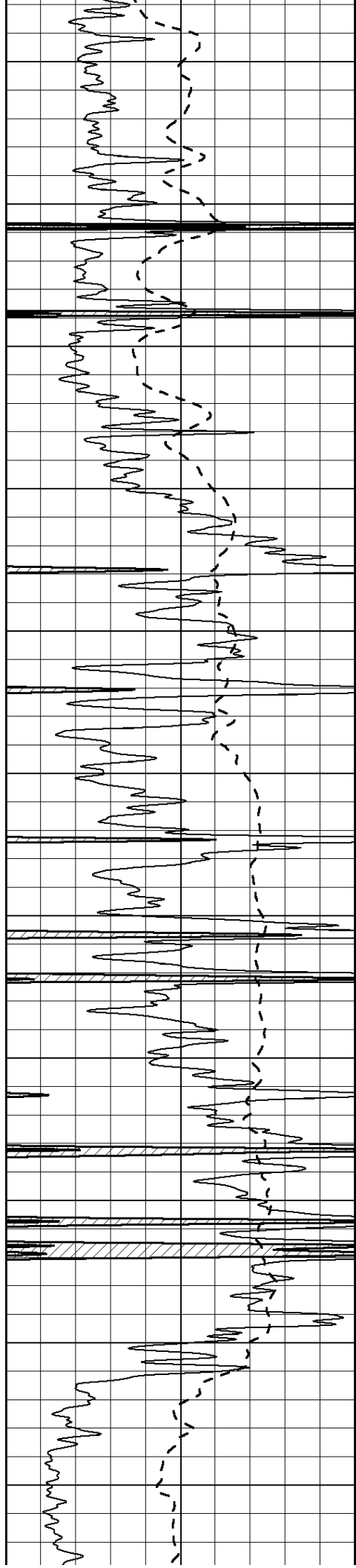












3750

3800

3850

3900

3950

4000

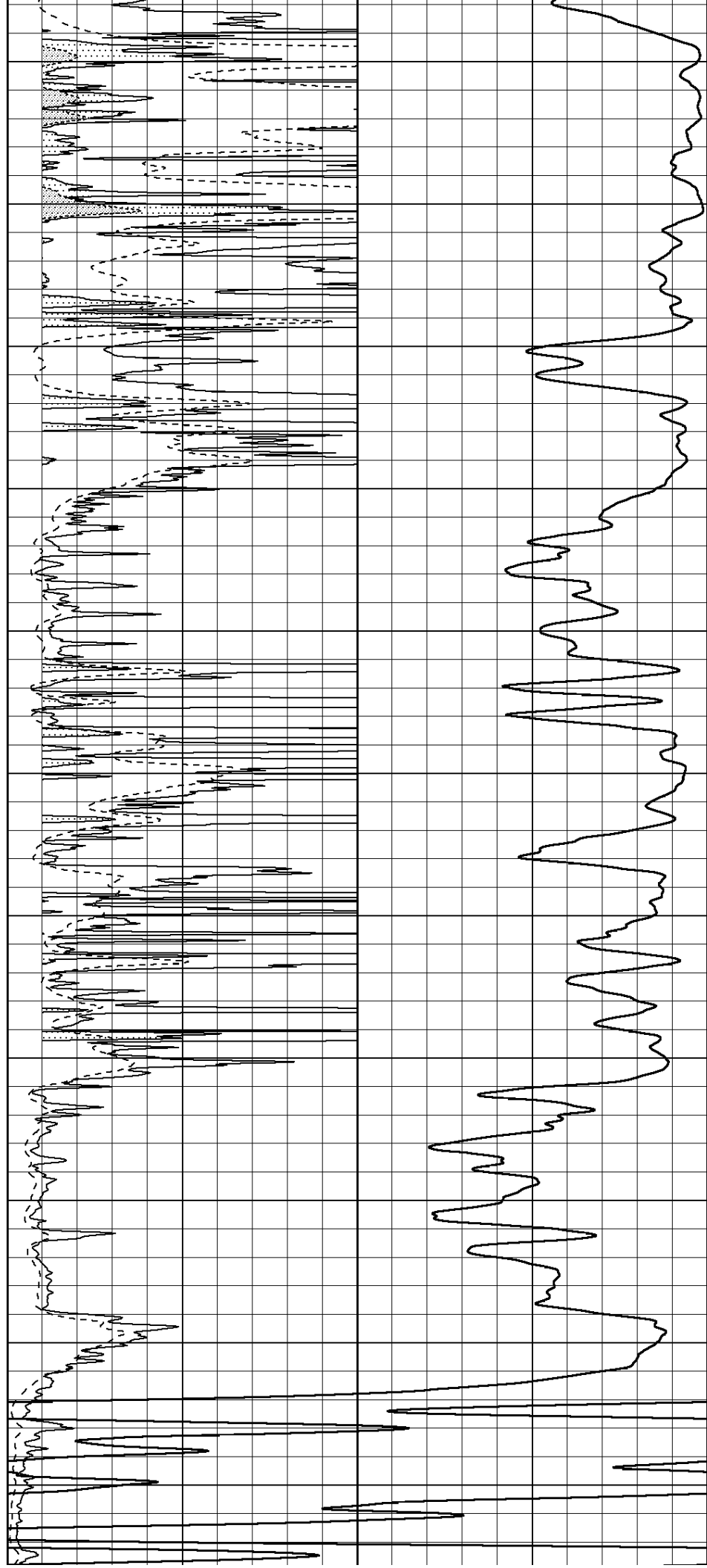
4050

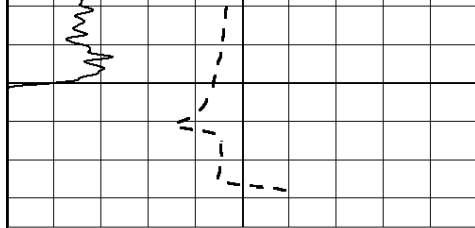
4100

4150

4200

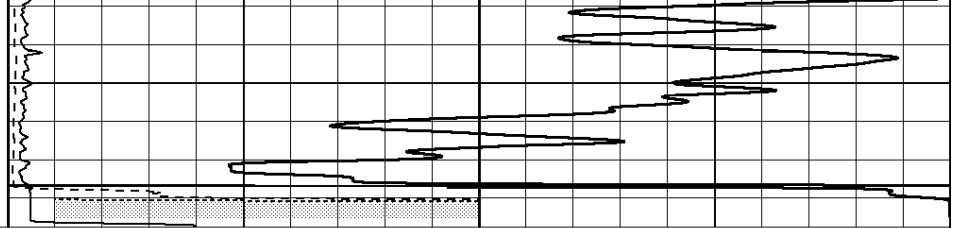
4250





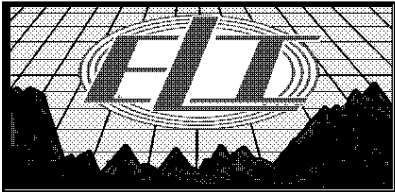
0 Gamma Ray (GAPI) 150
 -100 SP (mV) 100

4300



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

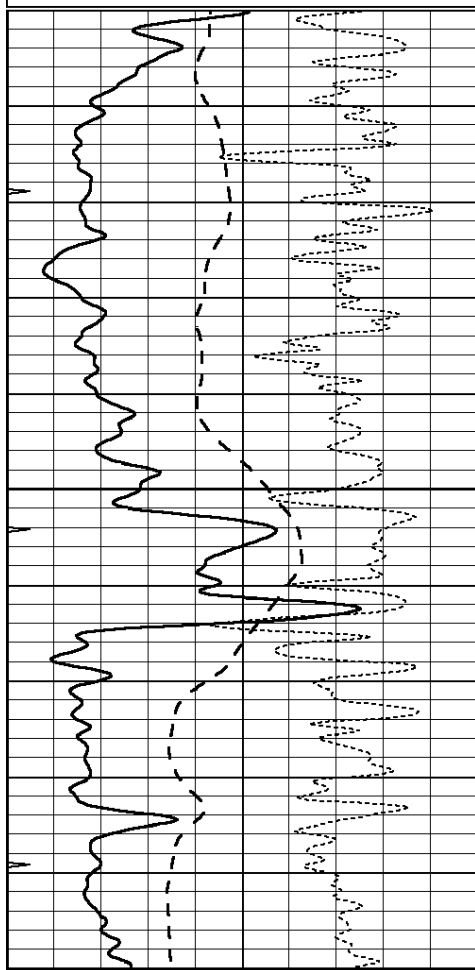


MAIN PASS

Database File: 2116ddn.db
 Dataset Pathname: pass3.1
 Presentation Format: _dil
 Dataset Creation: Sun Dec 10 08:14:32 2017 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

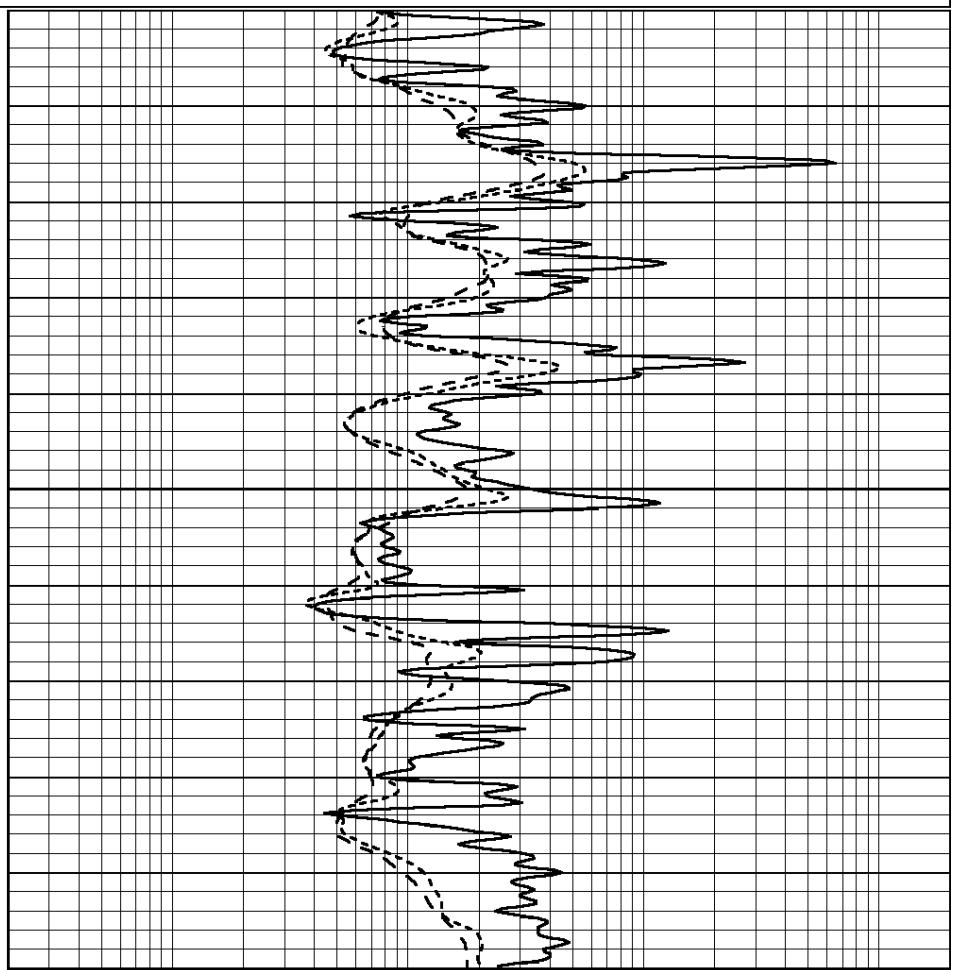
0.2 SHALLOW GUARD (Ohm-m) 2000
 0.2 DEEP INDUCTION (Ohm-m) 2000
 0.2 MEDIUM INDUCTION (Ohm-m) 2000

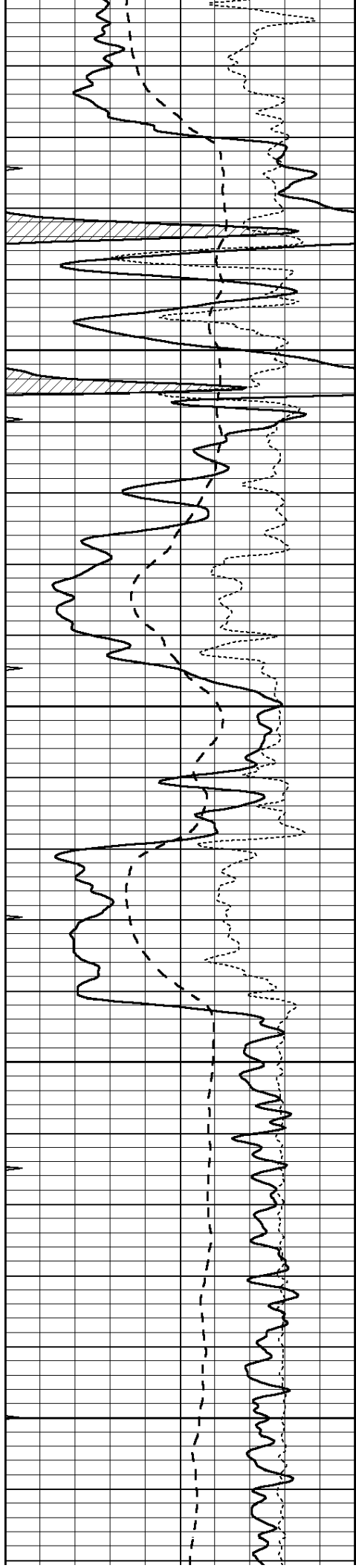


3000

3050

3100



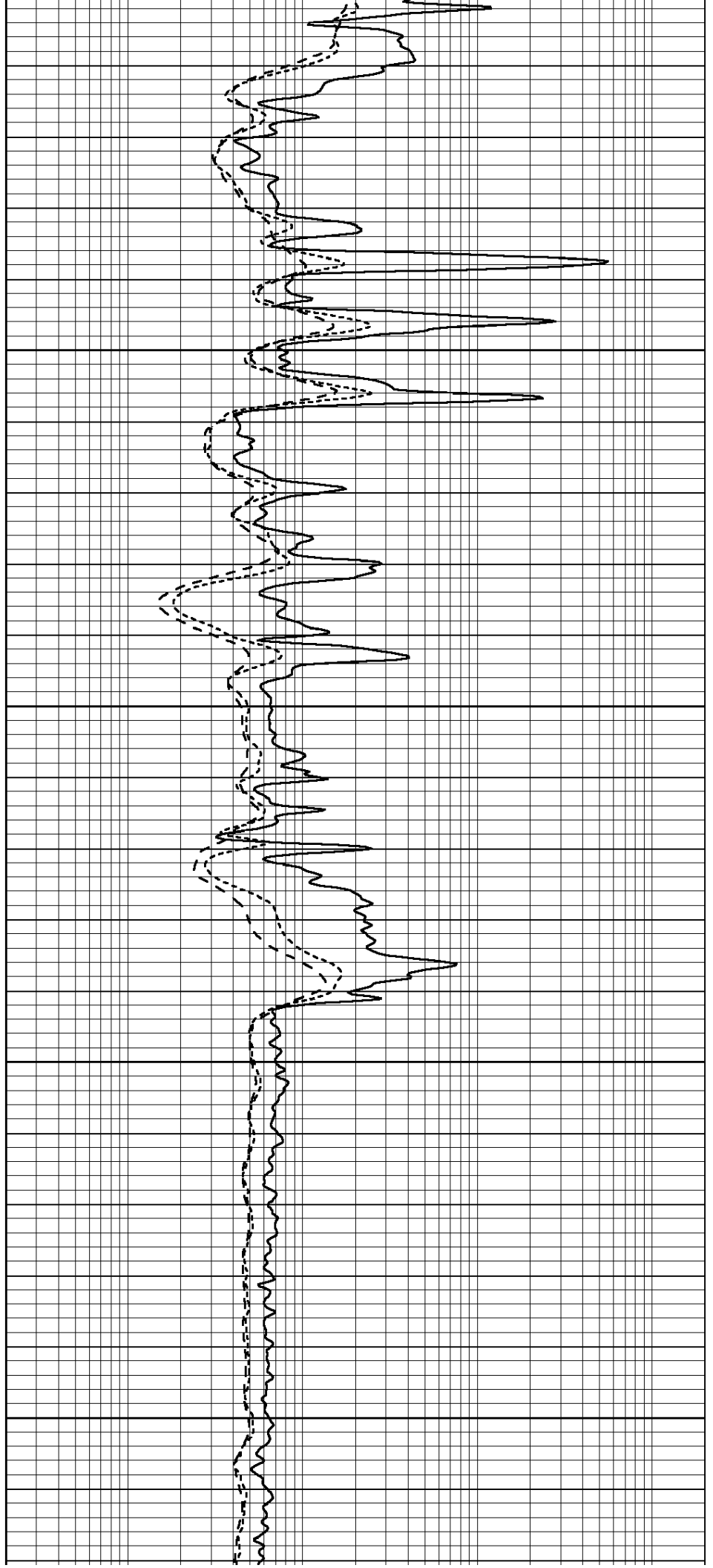


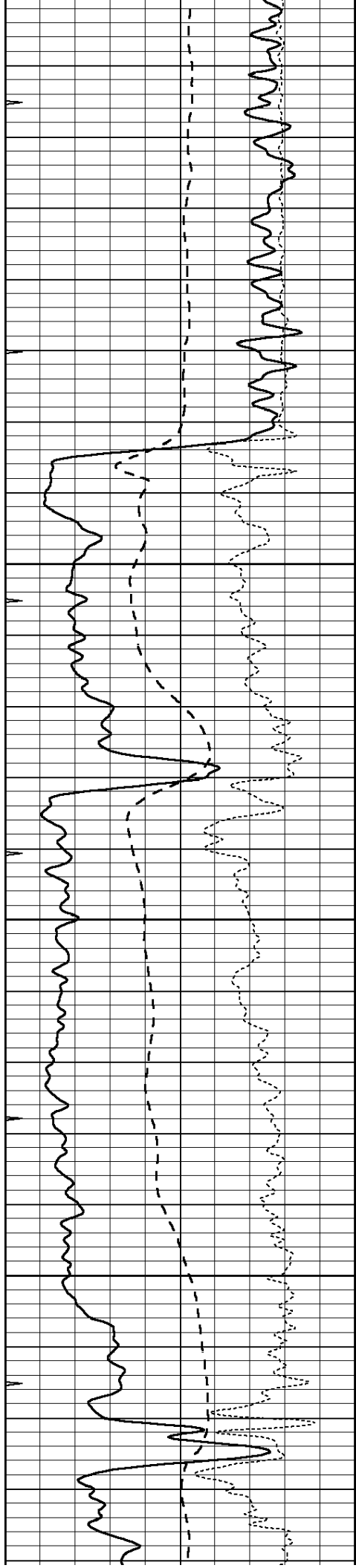
3150

3200

3250

3300



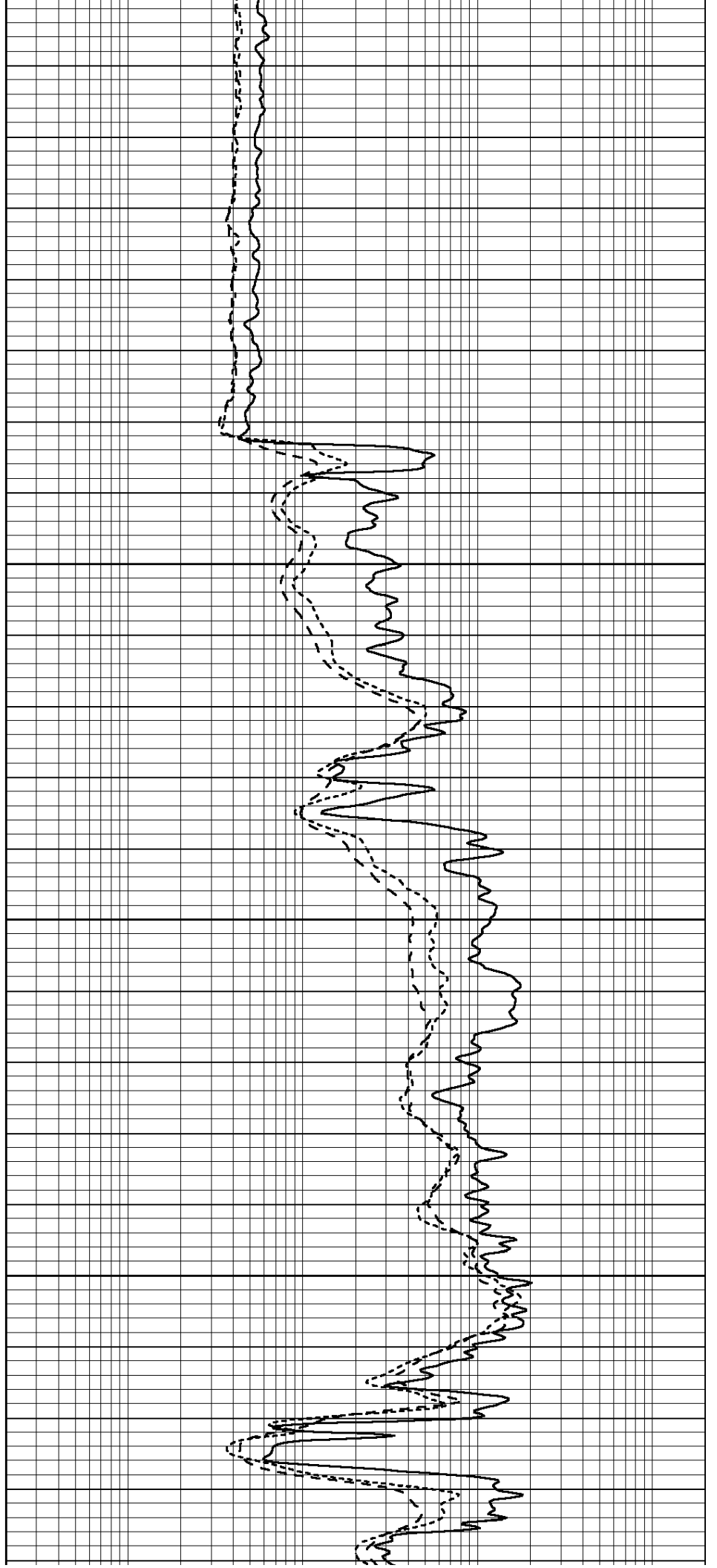


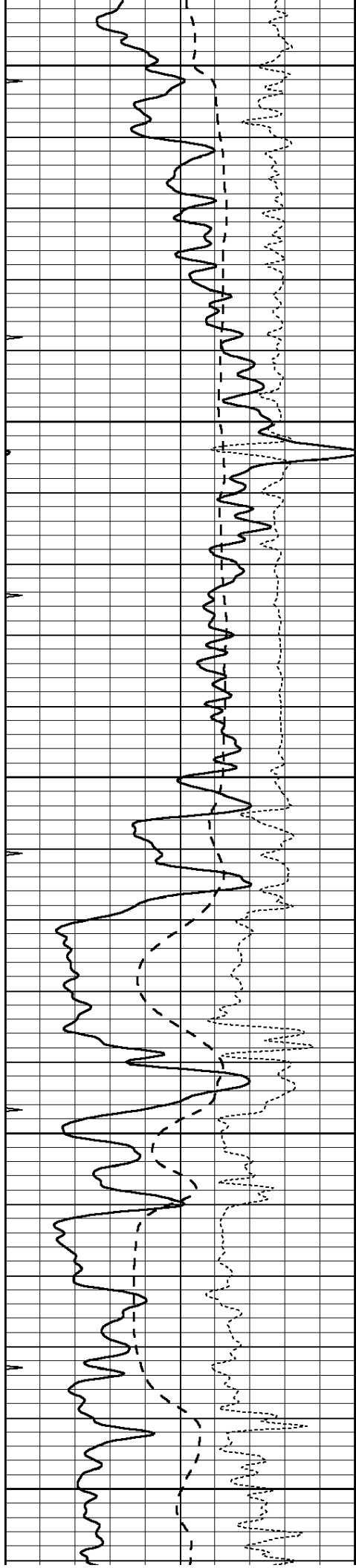
3350

3400

3450

3500





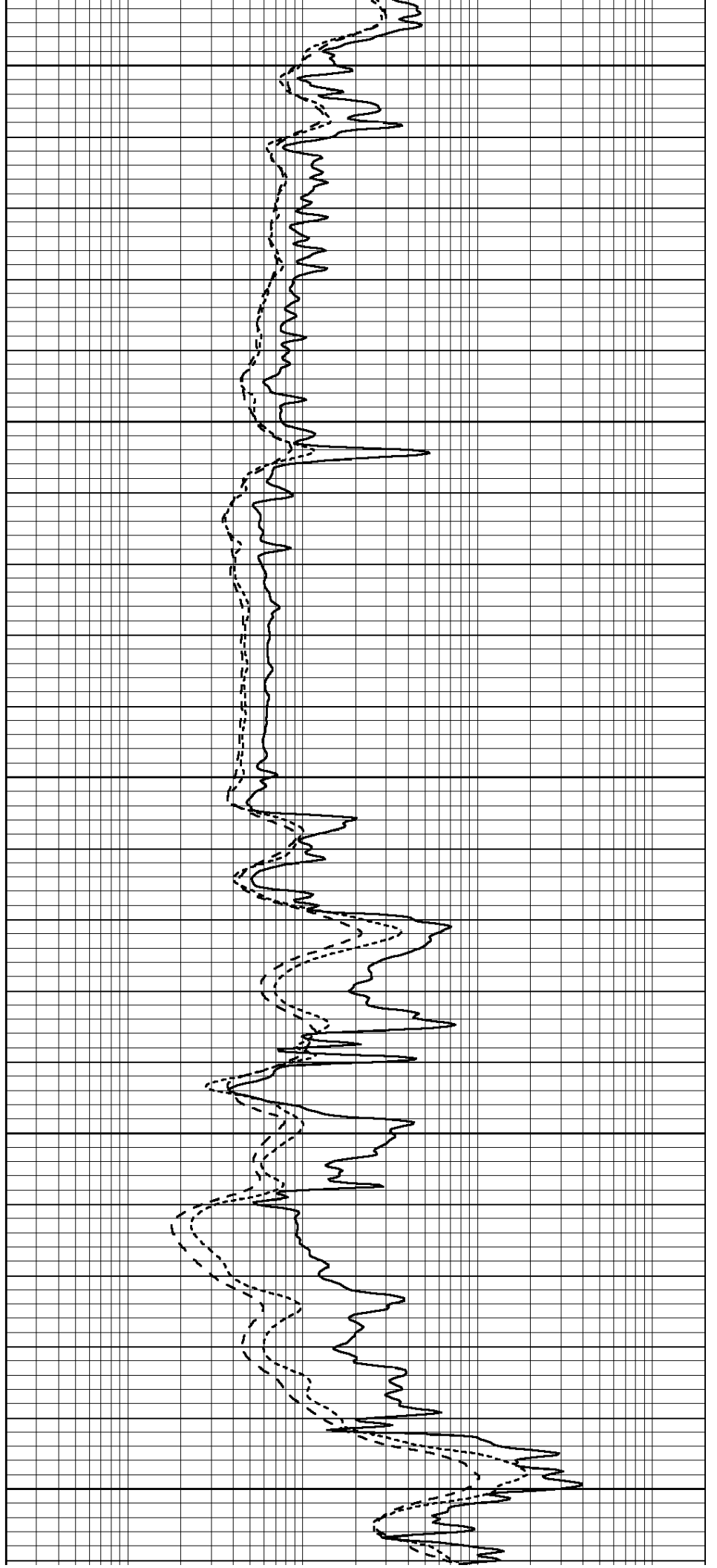
3550

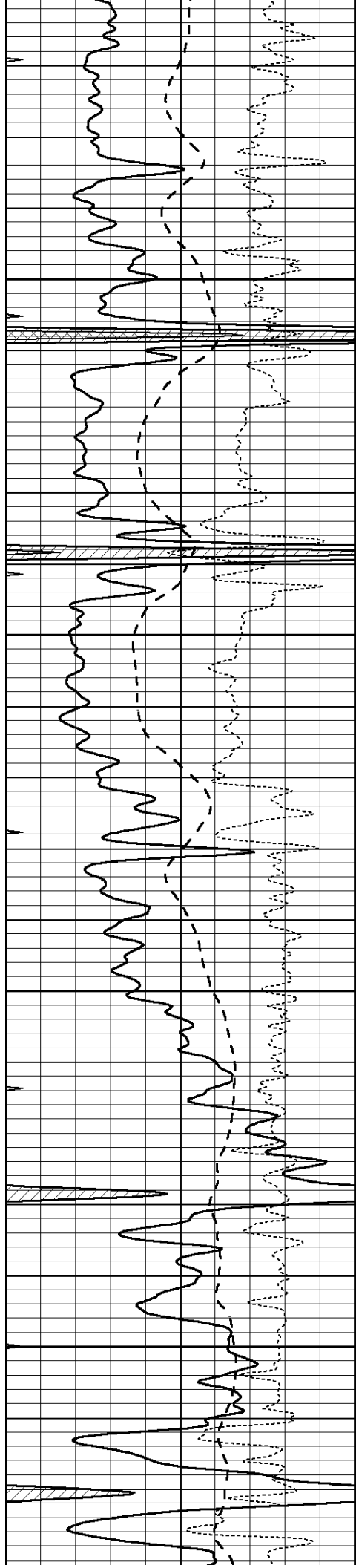
3600

3650

3700

3750



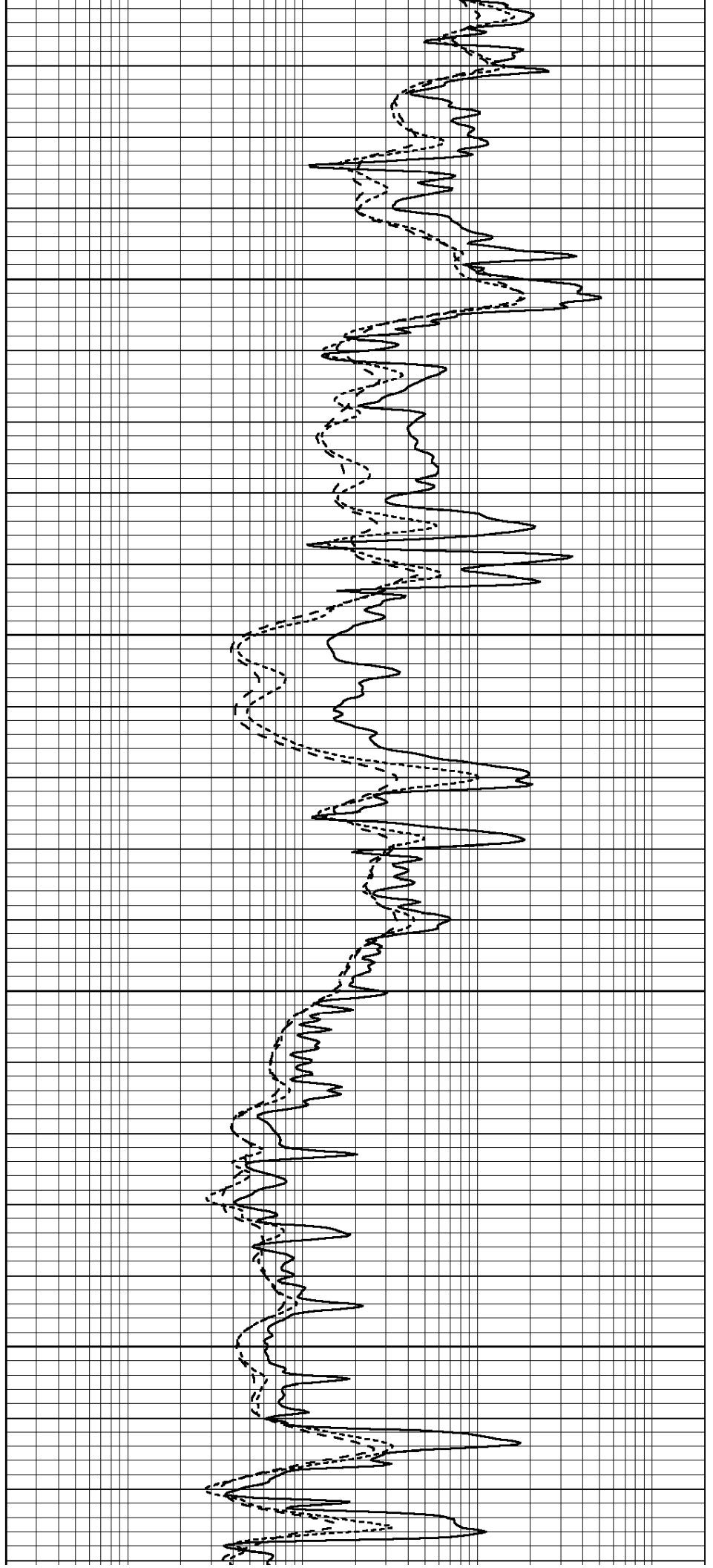


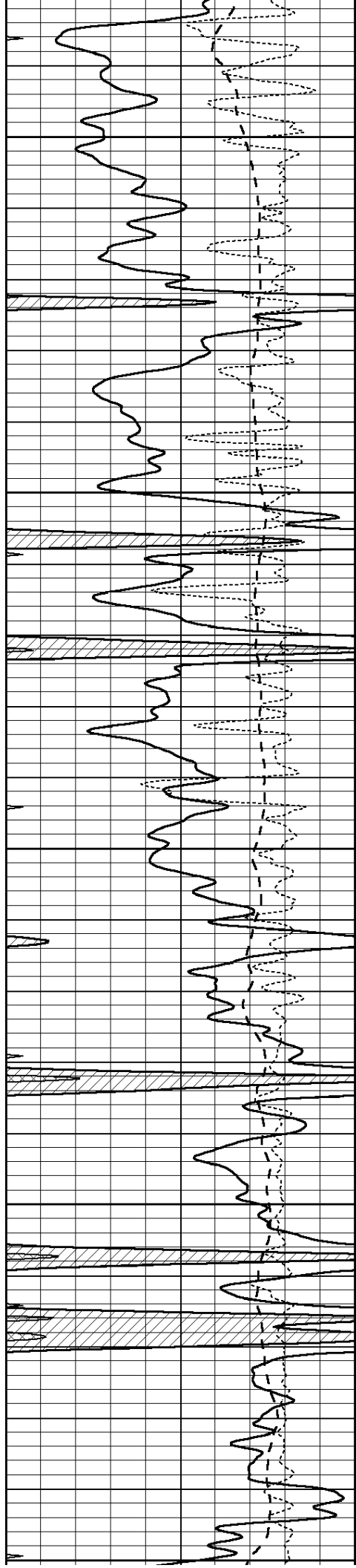
3800

3850

3900

3950





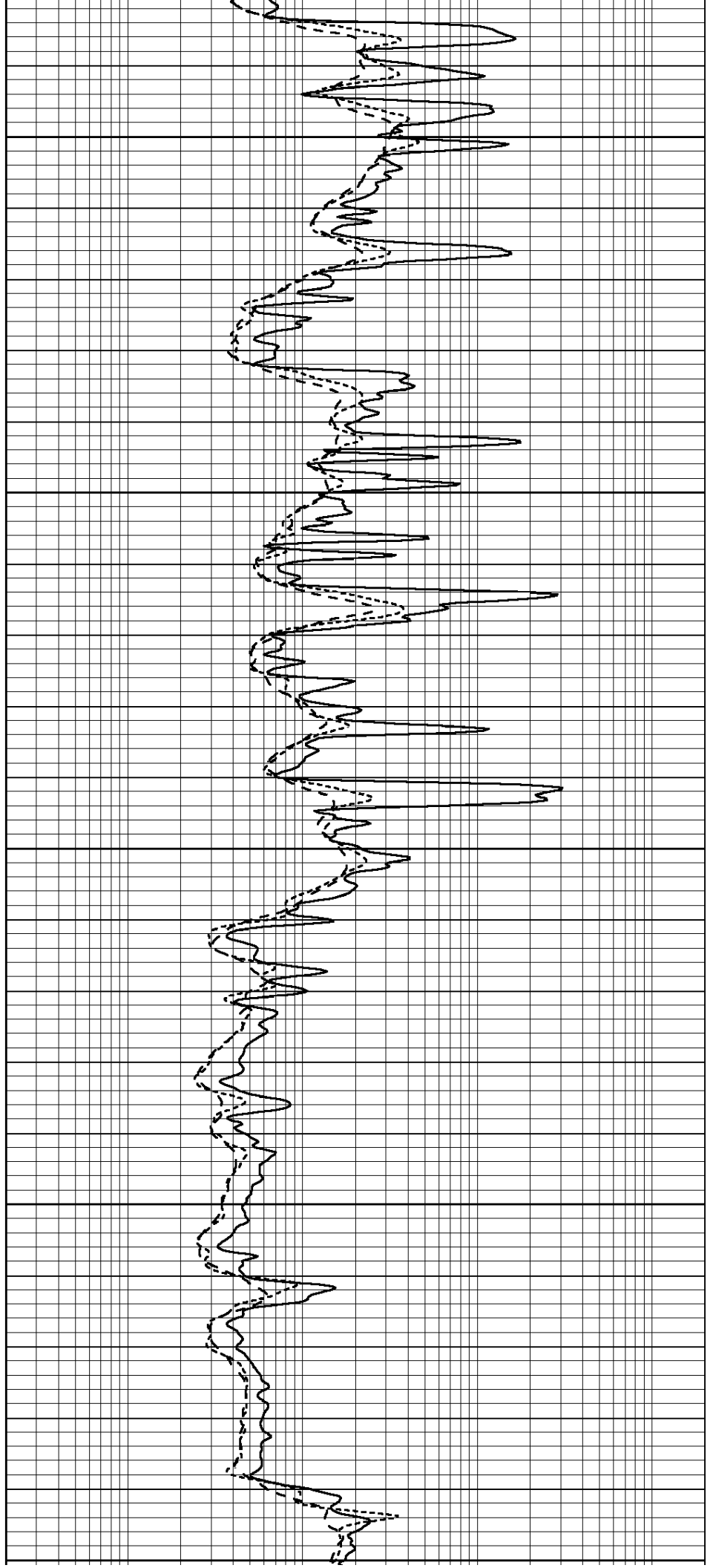
4000

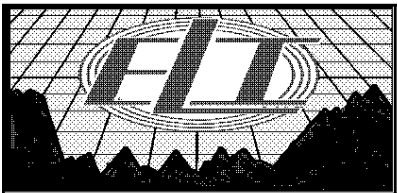
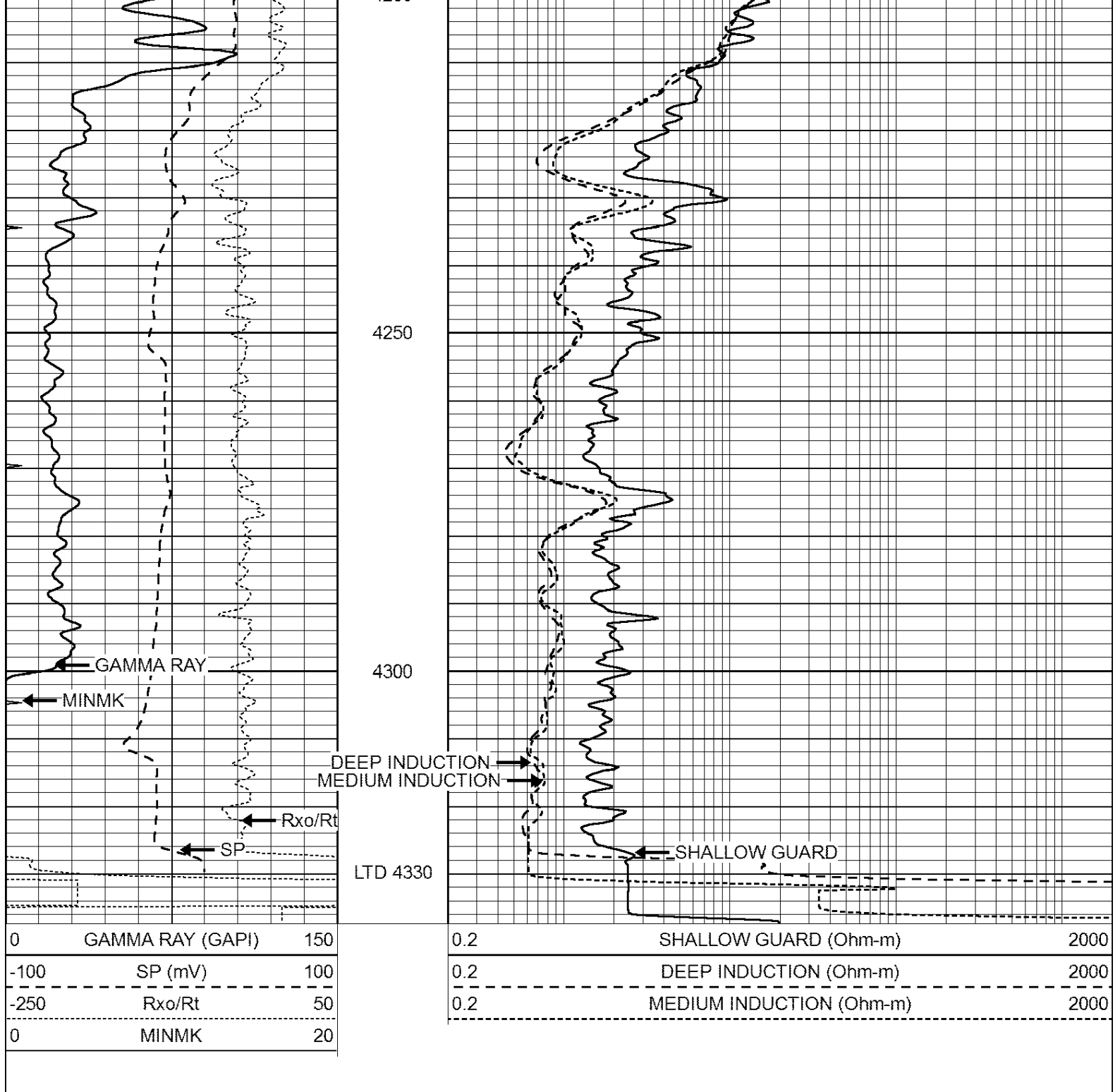
4050

4100

4150

4200

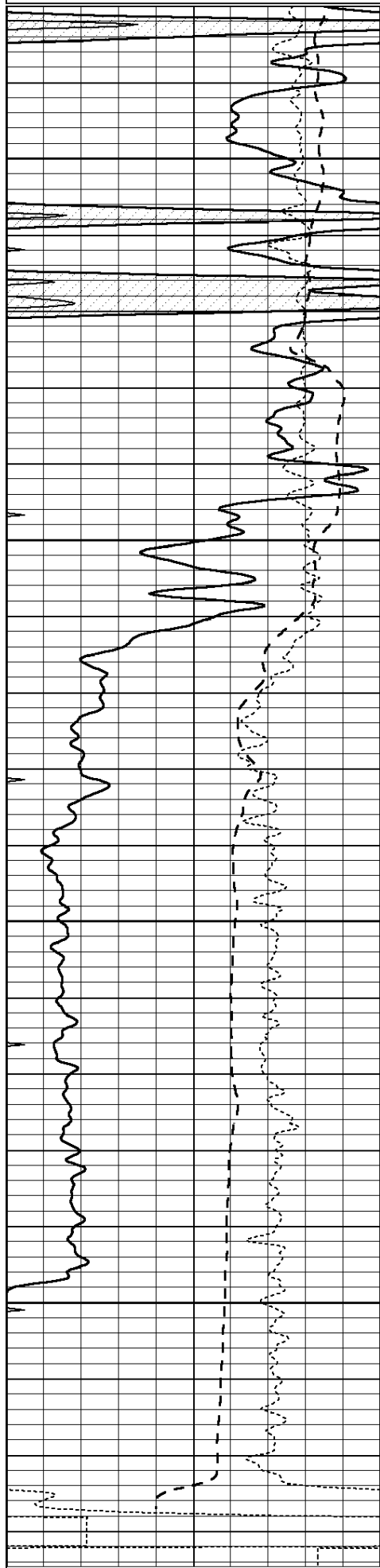




REPEAT SECTION

Database File: 2116ddn.db
 Dataset Pathname: pass2.1
 Presentation Format: _dil
 Dataset Creation: Sun Dec 10 07:42:47 2017 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	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000



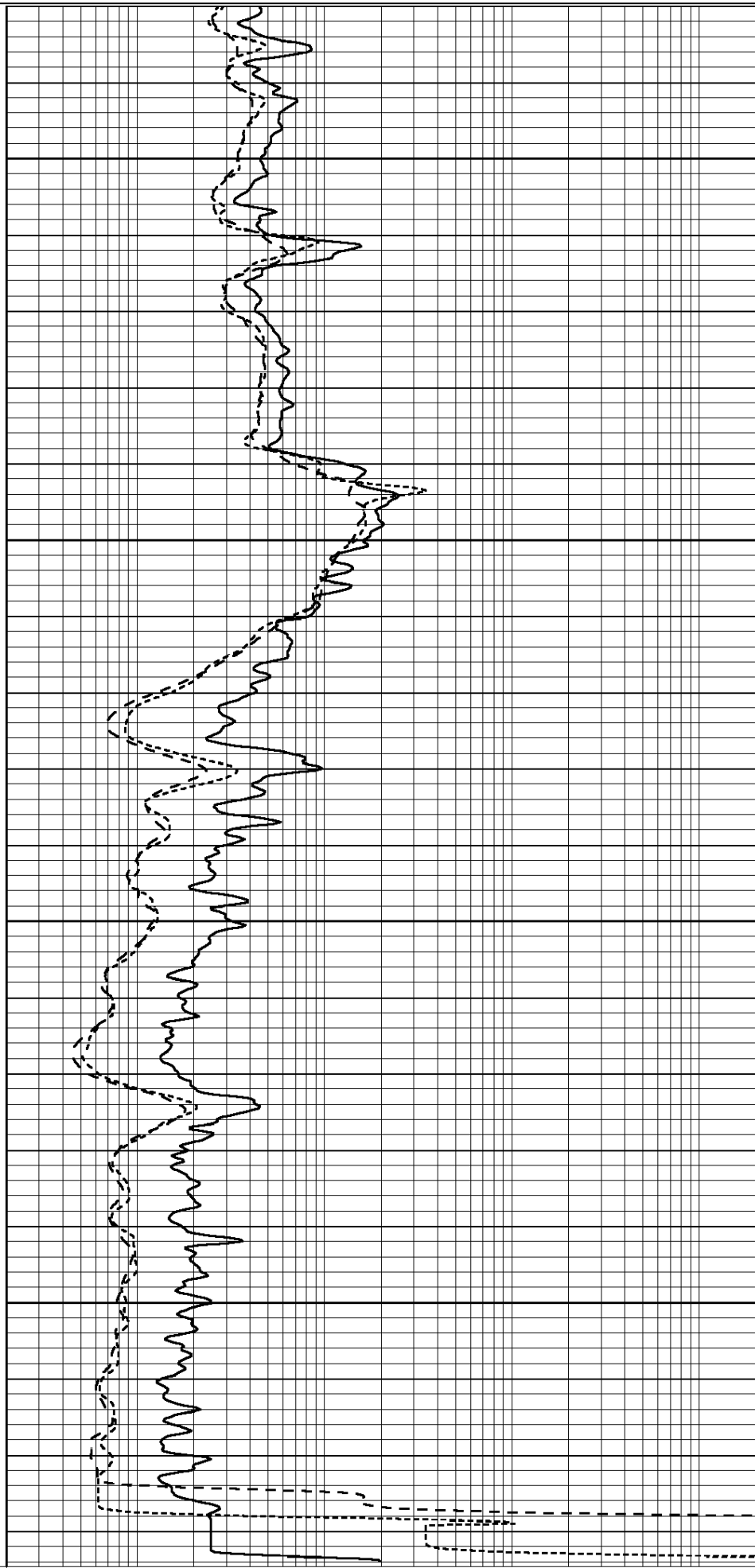
4150

4200

4250

4300

0 GAMMA RAY (GAPI) 150



0 2 SHALLOW GUARD (Ohm-m) 2000

-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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

Calibration Report

Database File: pe2.db
 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

Loop:	Readings				References		Results	
	Air	Loop	V		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
Phi		1.7100	0.5000	1.3800	psi

Rho		1.7100		2.5900		1.5800		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	0.0	0.0	0.0	cps
Window 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	cps
Window 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	cps
Window 4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	cps
Long Space	0.0	0.0	0.0	0.0	0.0	0.0	0.0	cps
Short Space	0.0	0.0	0.0	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	0.0	0.0	0.0	cps
Window 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	cps
Window 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	cps
Window 4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	cps
Long Space	0.0	0.0	0.0	0.0	0.0	0.0	0.0	cps
Short Space	0.0	0.0	0.0	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		Normalization	
Short Space	1.00	cps	1.00	cps	1.0000	
Long Space	1.00	cps	1.00	cps	1.0000	

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

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

2)	Short Space Long Space	cps cps	pu	pu
3)	Short Space Long Space	cps cps	pu	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