

**COMPLETION
& PRODUCTION
SERVICES CO.**

**DUAL
INDUCTION
LOG**

Company I.A. OPERATING, INC.
Well ARCHER #21-1
Field
County SHERIDAN State KANSAS

Company I.A. OPERATING, INC.
Well ARCHER #21-1
Field
County SHERIDAN
State KANSAS

Location: API #: 15-179-21328-0000
SEC 21 TWP 8S RGE 26W
2456' FSL & 545' FEL
NW - NE - NE - SE
Ground Level Elevation 2483
Log Measured From KELLY BUSHING 8' A.G.L.
Drilling Measured From KELLY BUSHING
Other Services
CDL/CNL
SON
Elevation
K.B. 2491
D.F. 2489
G.L. 2483

Date	5/1/13
Run Number	ONE
Depth Driller	3925
Depth Logger	3925
Bottom Logged Interval	3923
Top Log Interval	0
Casing Driller	222
Casing Logger	221
Bit Size	7.875
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.3 / 66
pH / Fluid Loss	9.5 / 7.4
Source of Sample	FLOWLINE
Rim @ Meas. Temp	1.40 @ 60F
Rmf @ Meas. Temp	1.05 @ 60F
Rmc @ Meas. Temp	1.68 @ 60F
Source of Rmf / Rmc	MEASURED
Rim @ BHT	0.73 @ 115F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	
Maximum Recorded Temperature	115F
Equipment Number	860
Location	HAYS, KS.
Recorded By	JEFF GRONEWEG
Witnessed By	TERRY McLEOD

<<< Fold Here >>>

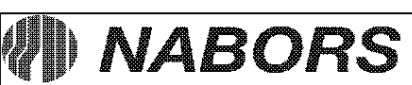
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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

NABORS COMPLETION & PRODUCTION SERVICES
785-628-6395

THANK YOU FOR YOUR BUSINESS

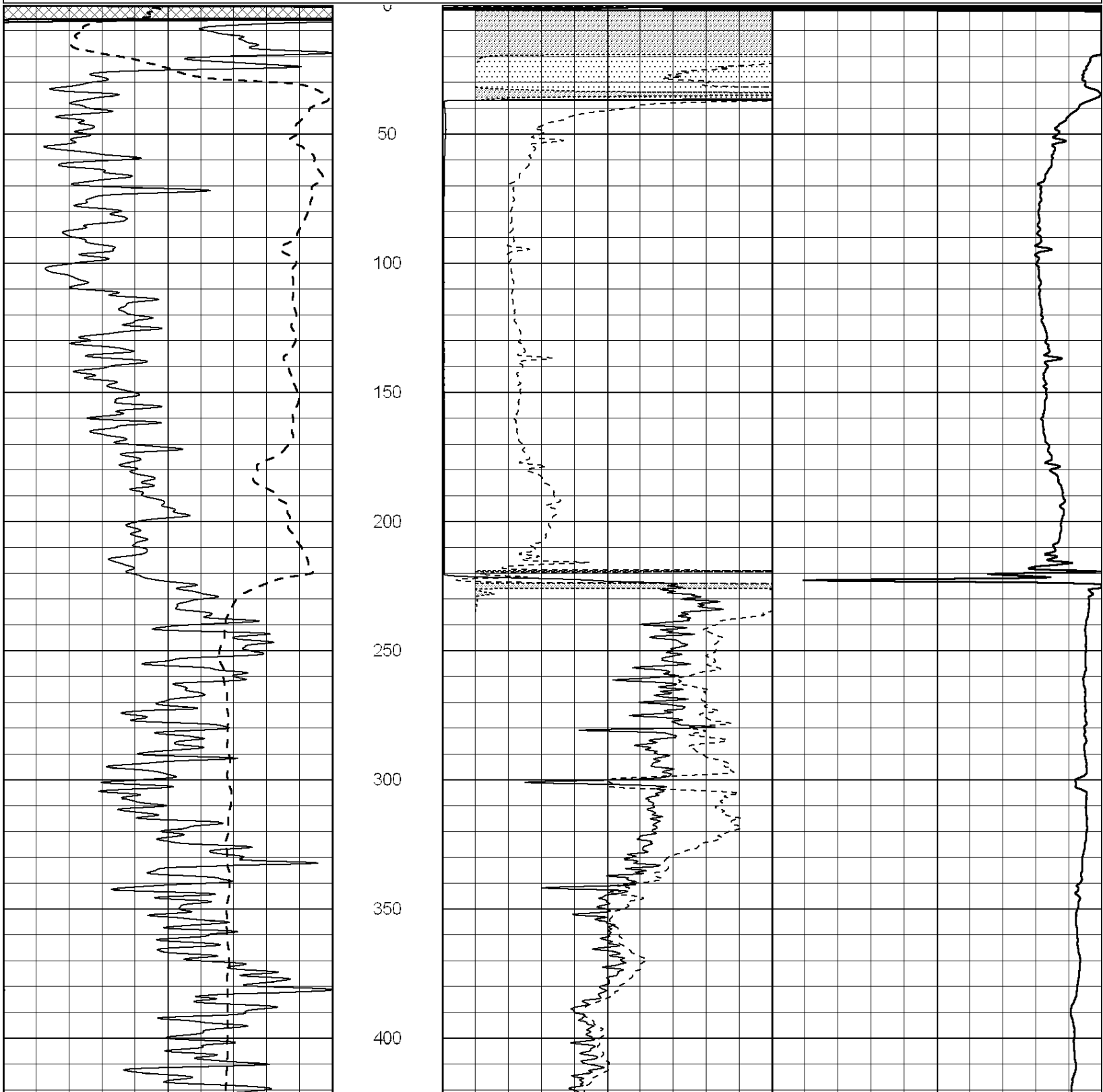
DIRECTIONS: HILL CITY, KS - WEST ON HWY 24 TO COUNTY LINE - 6 MILES WEST TO RD 90
.3 MILES SOUTH TO RD 10 - 1 MILE EAST TO RD 100 - TURN NORTHEAST ON DEAD END RD
EAST 1 MILE - SOUTH 1 MILE TO CATTLE GUARD - .2 MILES SOUTH TO NORTH SIDE OF CATTLE PEN
.7 MILES NORTH - EAST - SOUTH TO Y IN RD - TAKE Y .7 MILES NORTH - EAST TO GATE
.5 MILES NORTH TO LOCATION

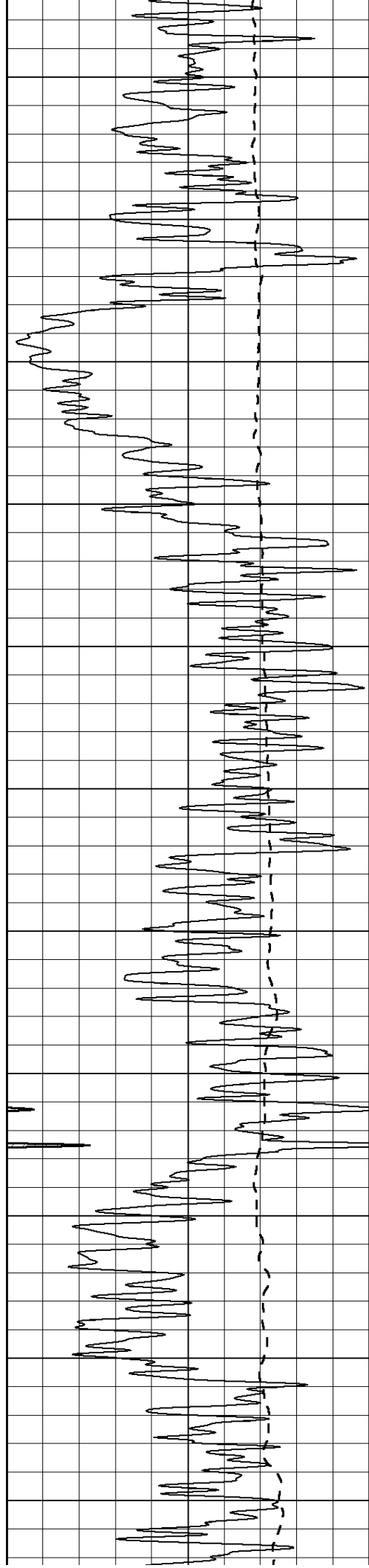


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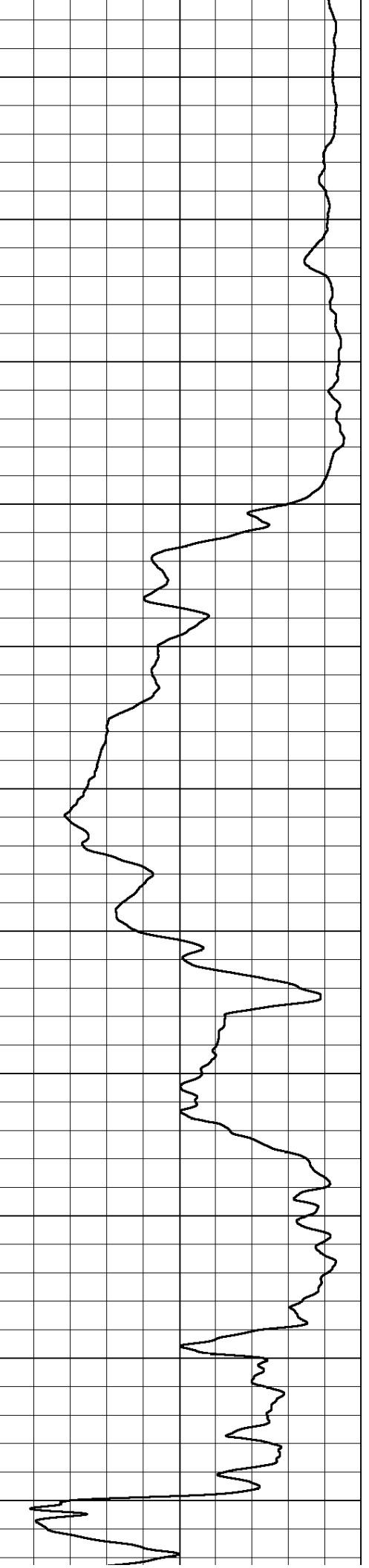
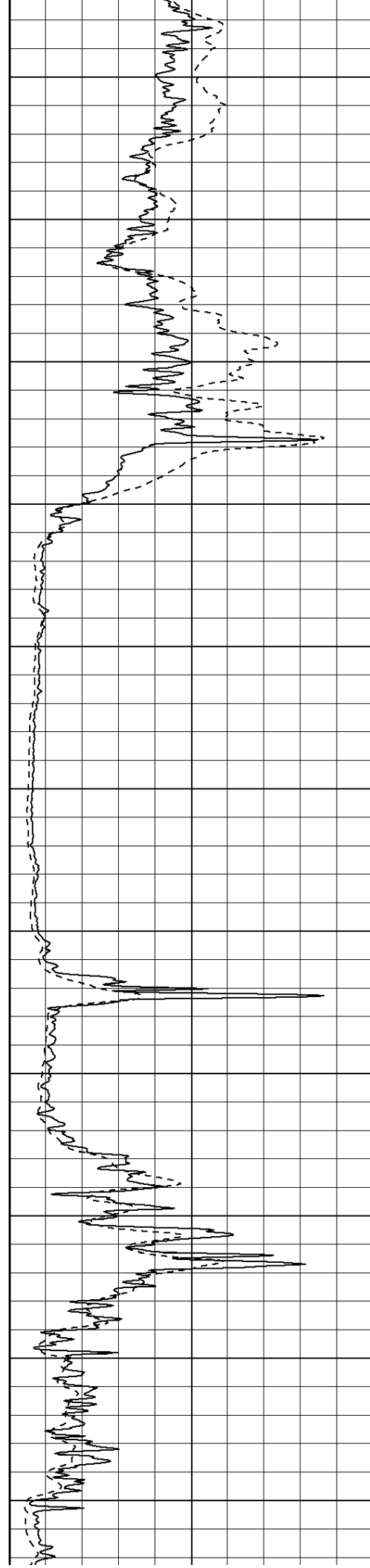
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 Dataset Pathname: pass4.4
 Presentation Format: _dil2
 Dataset Creation: Thu May 02 00:32:56 2013
 Charted by: Depth in Feet scaled 1:600

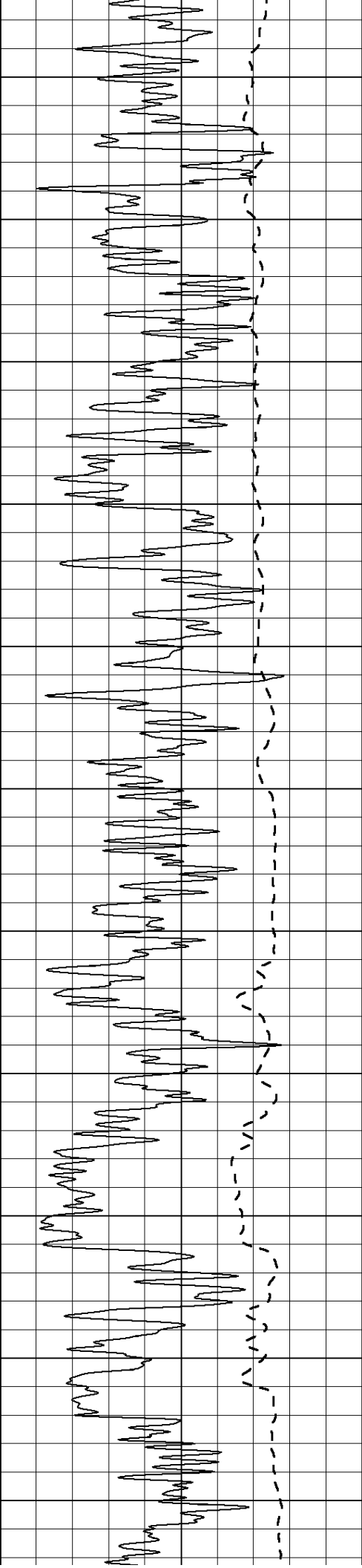
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			0	Deep Induction (Ohm-m)	50
			1000	CILD (mmho/m)	0
			50	RILD X10 (Ohm-m)	500
			50	RLL3 X10 (Ohm-m)	500



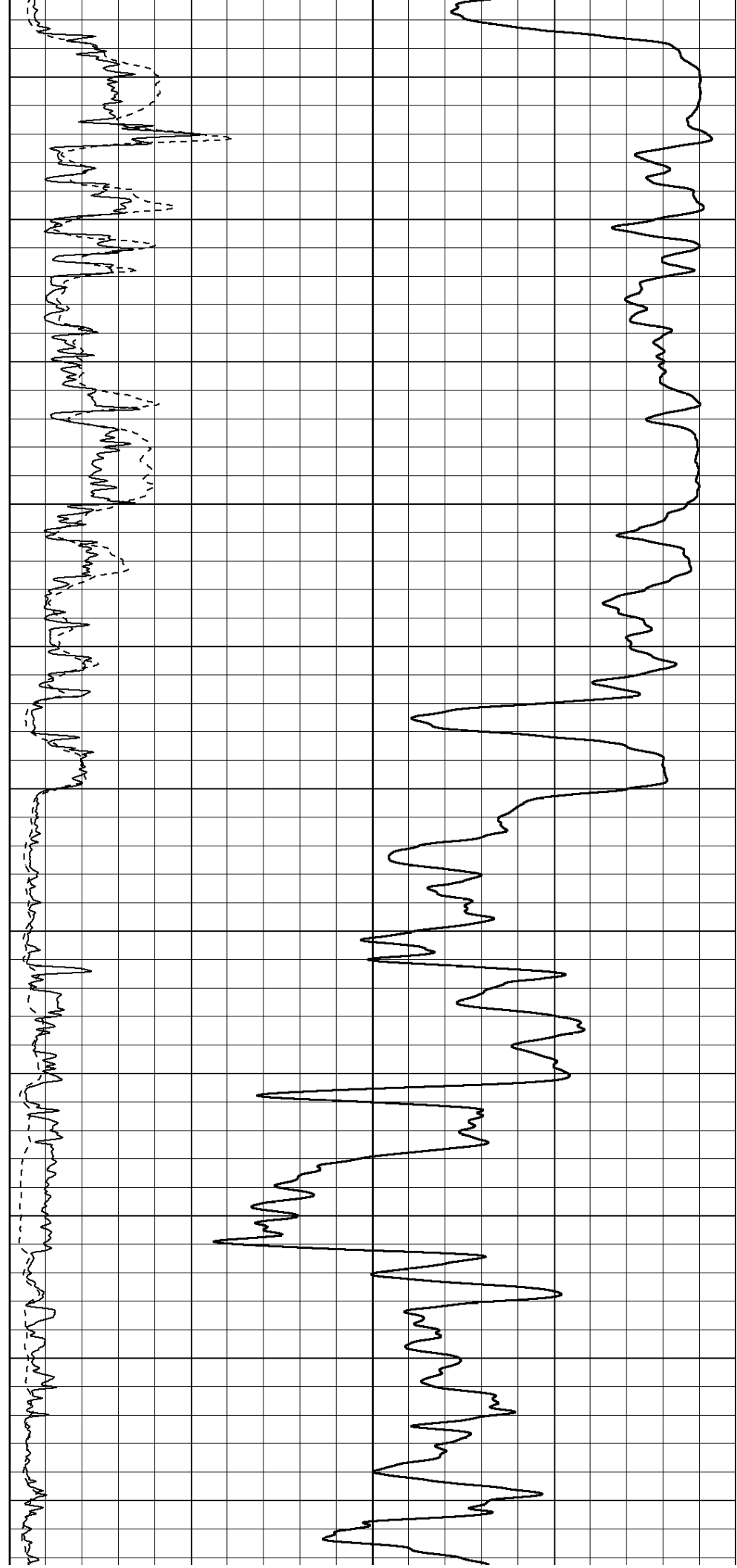


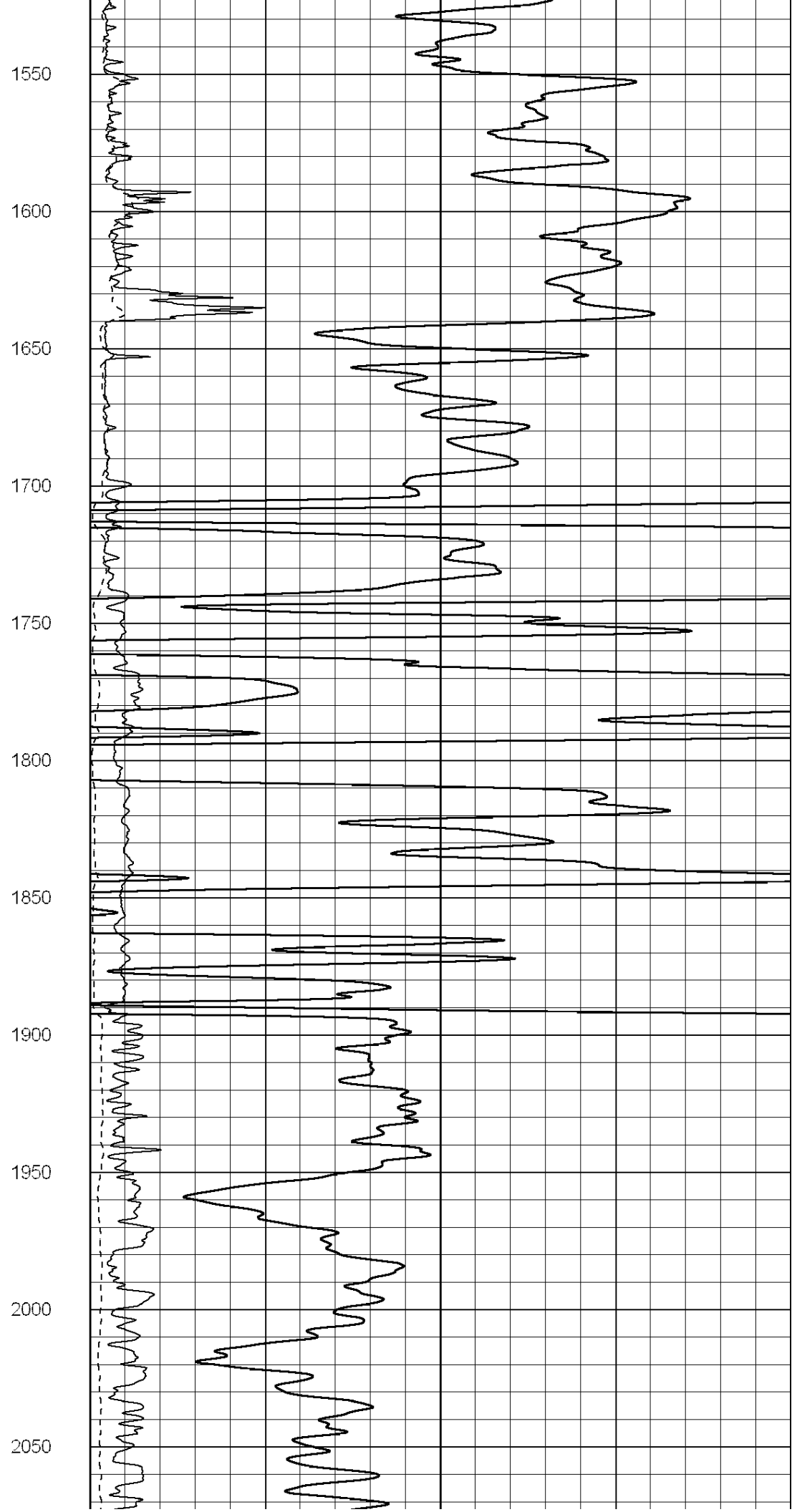
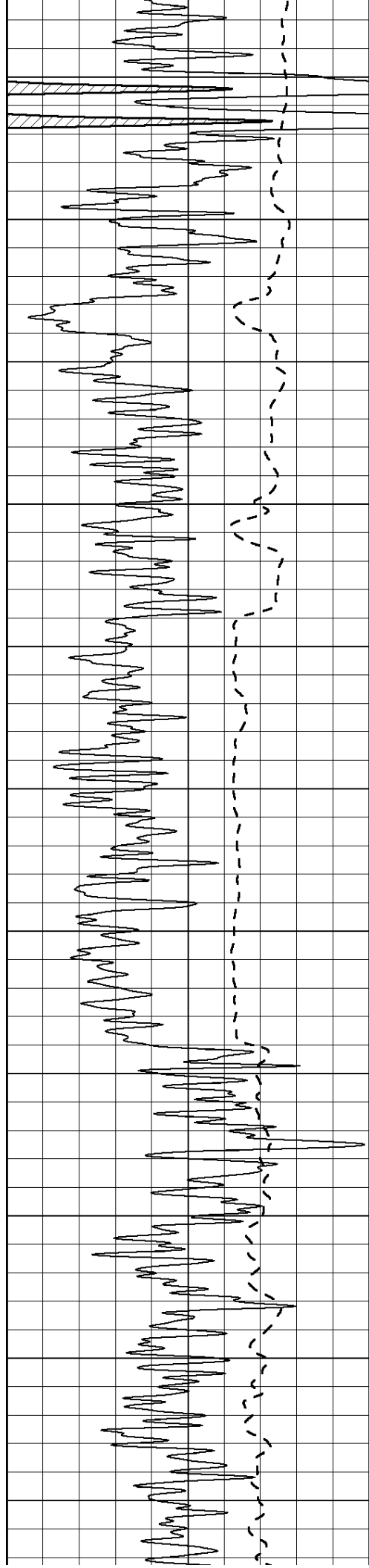
450
500
550
600
650
700
750
800
850
900
950

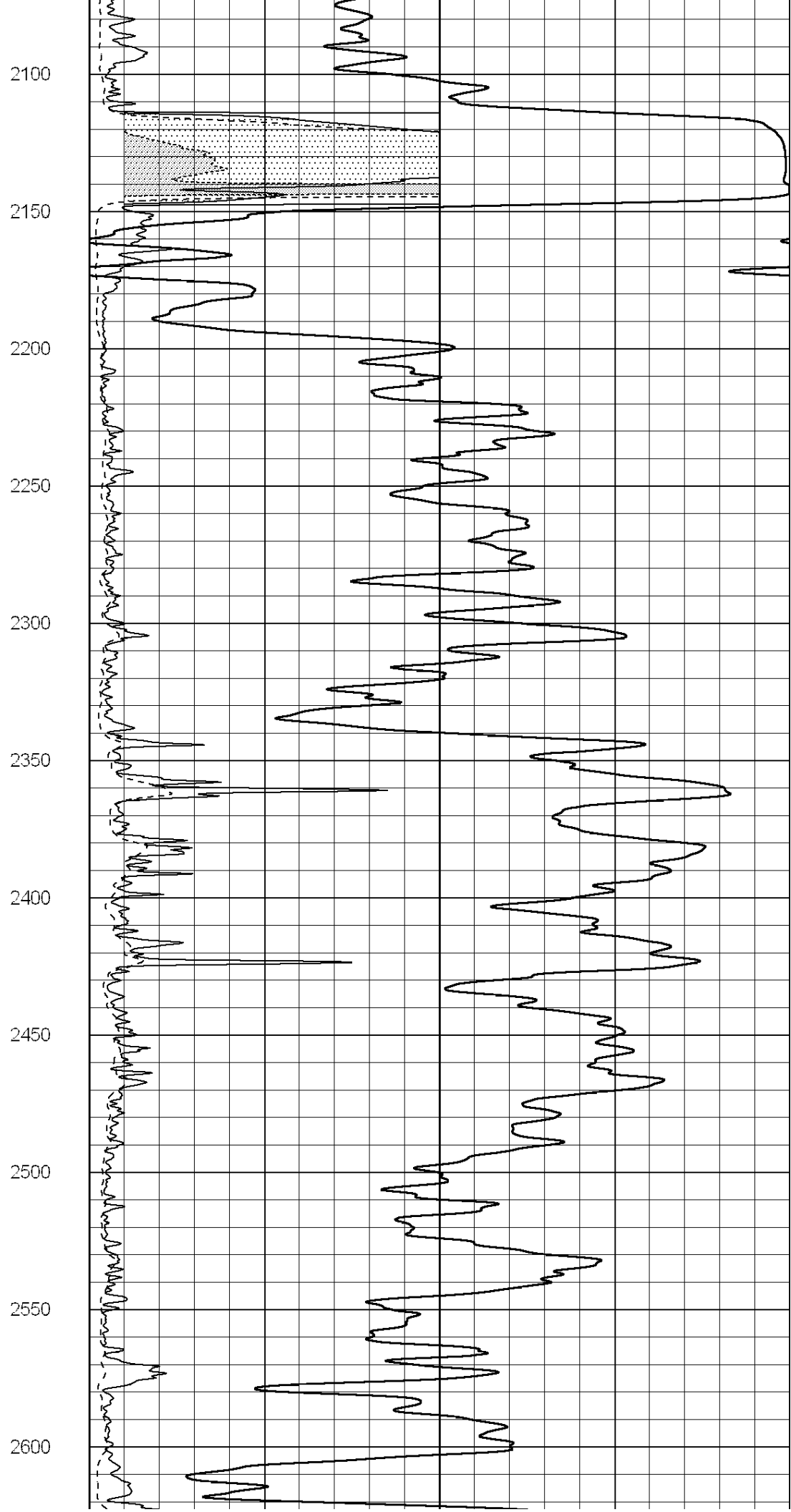
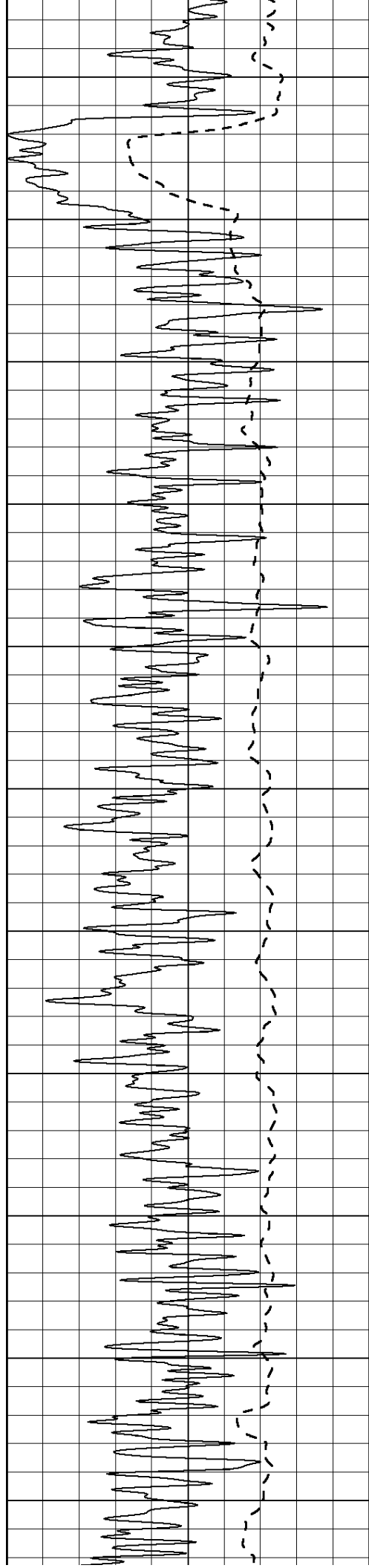


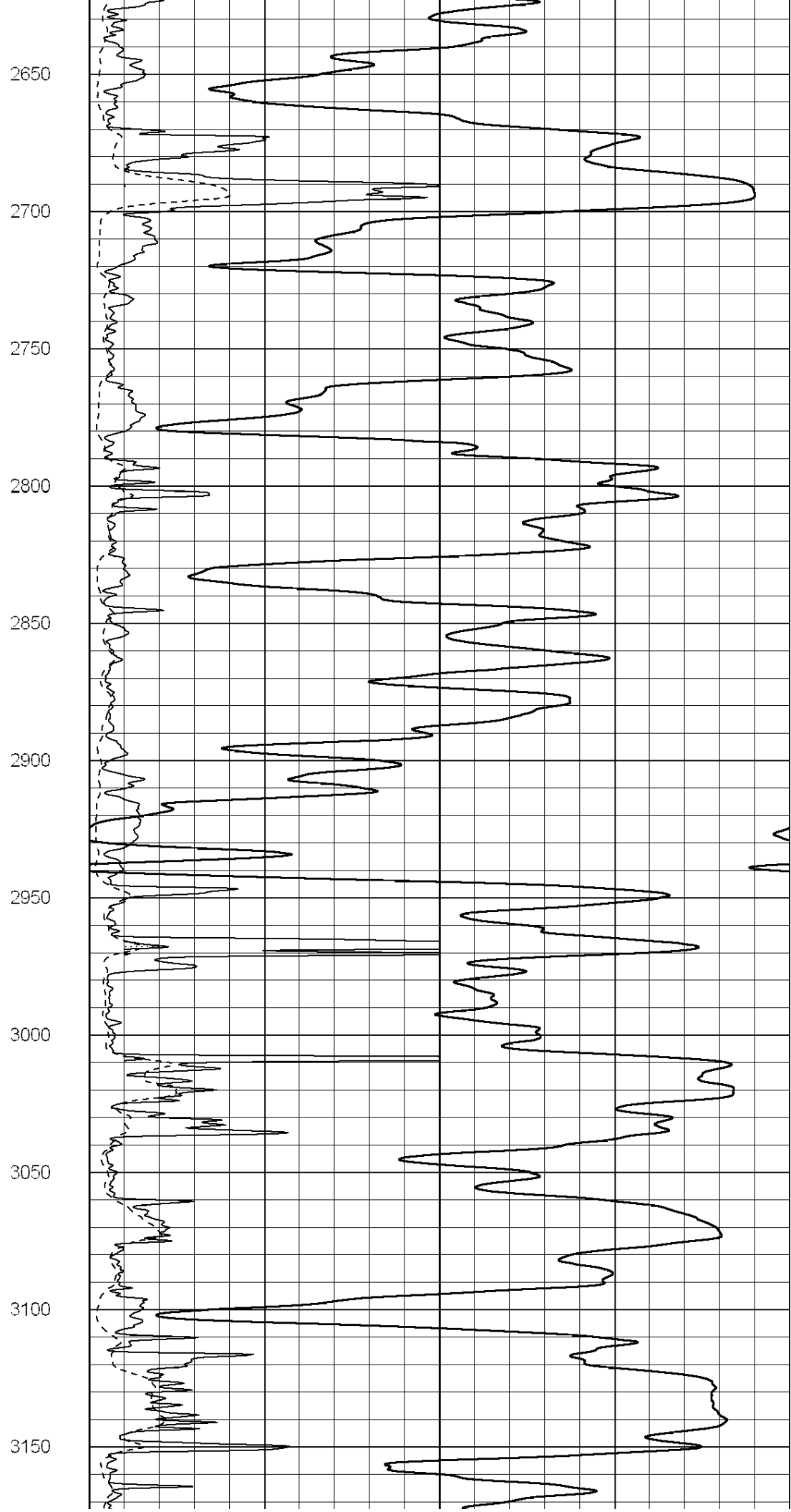
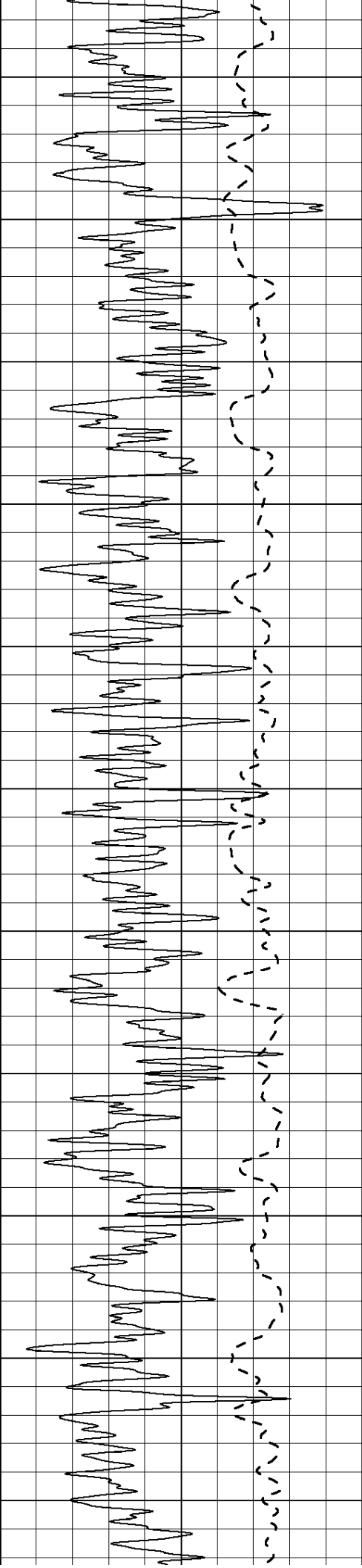


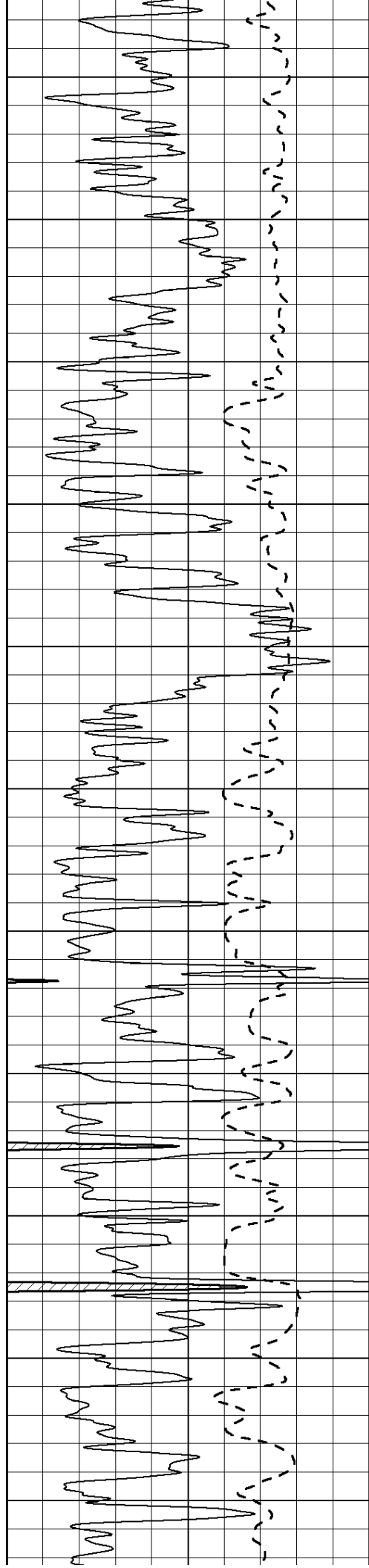
1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500



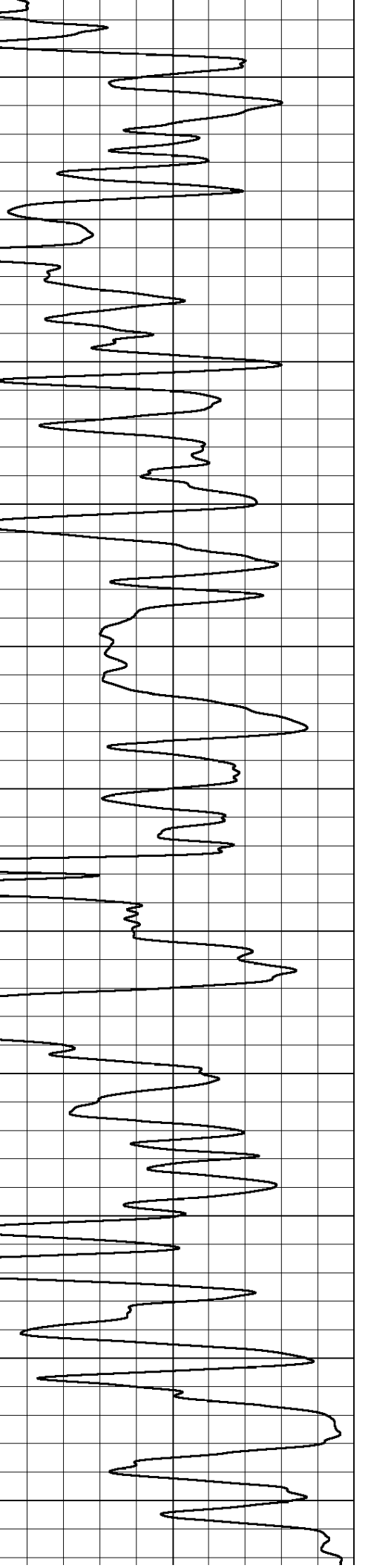
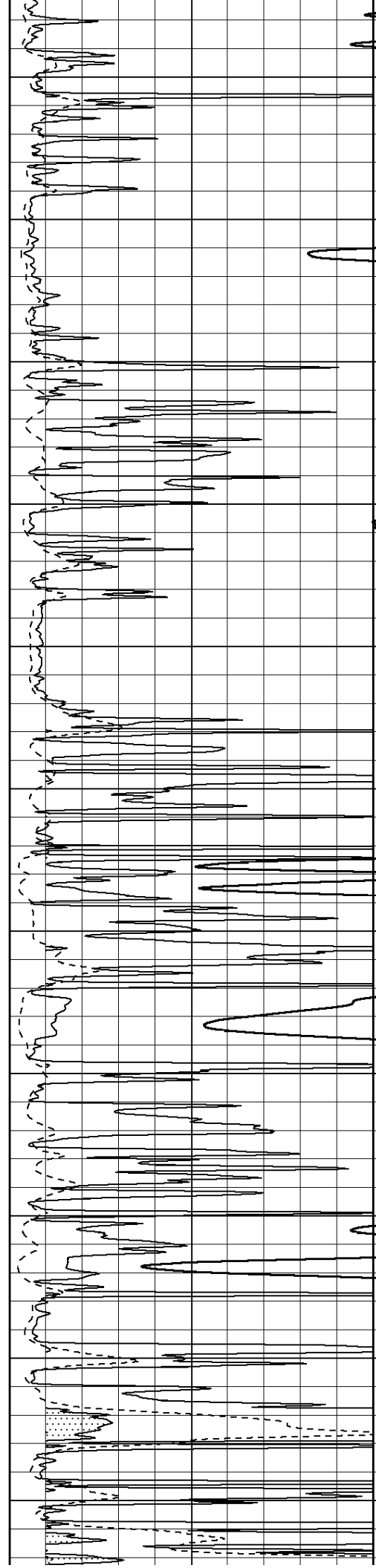


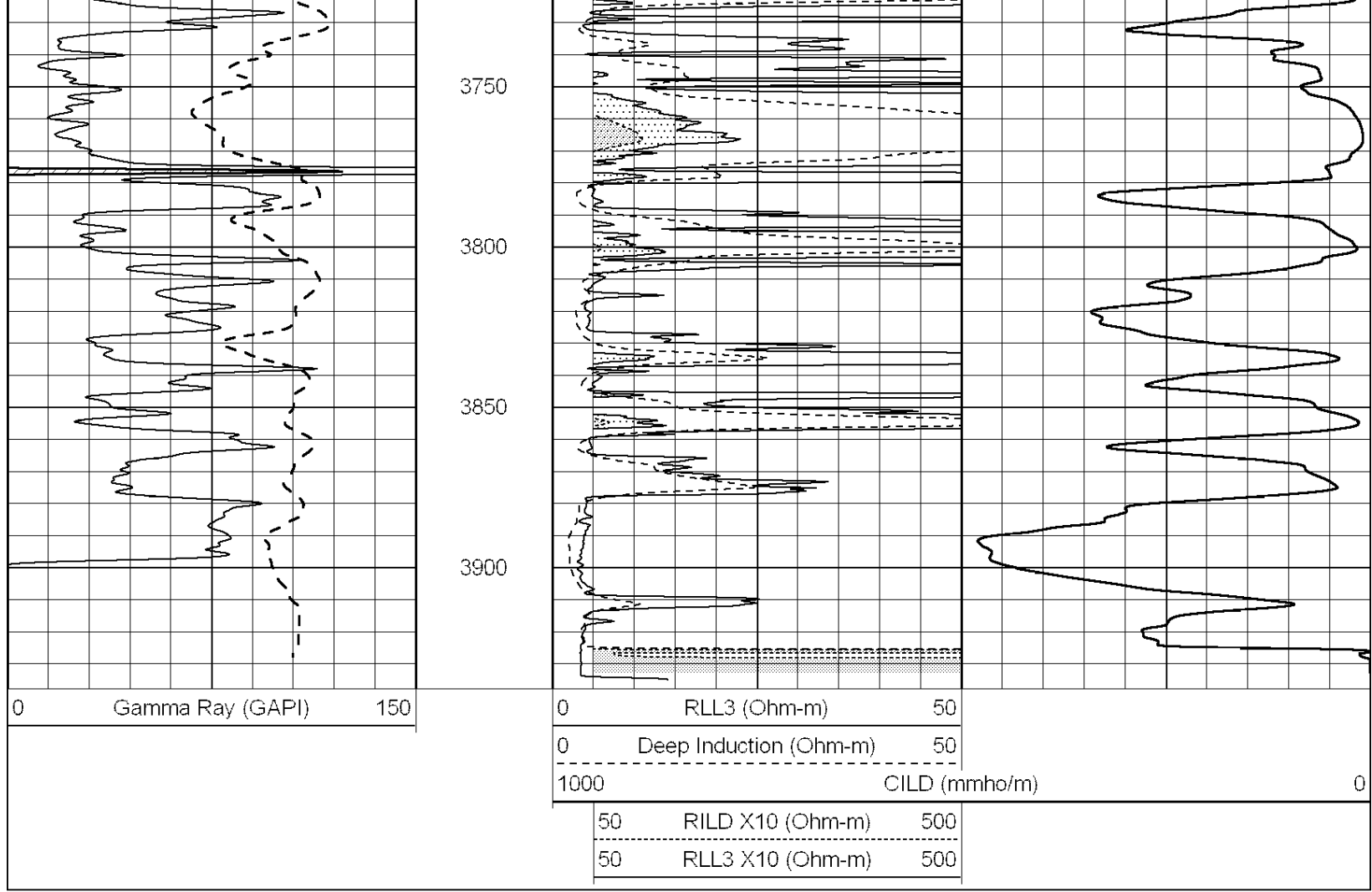






3200
3250
3300
3350
3400
3450
3500
3550
3600
3650
3700

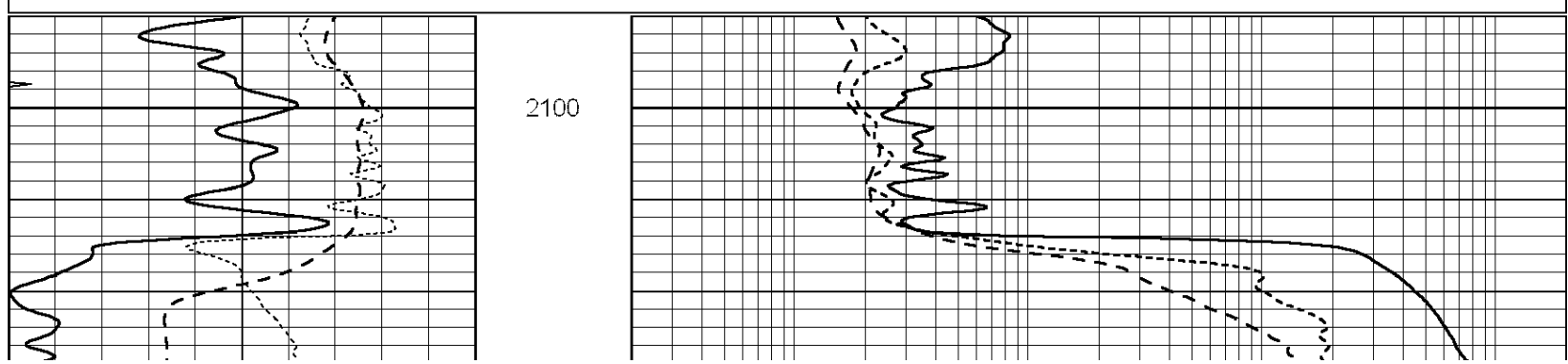


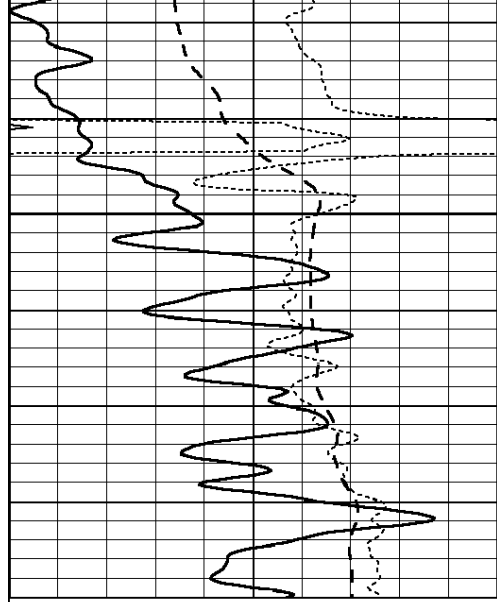


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Database File: 010994ddn.db
 Dataset Pathname: pass4.4
 Presentation Format: _dil
 Dataset Creation: Thu May 02 00:32:56 2013
 Charted by: Depth in Feet scaled 1:240

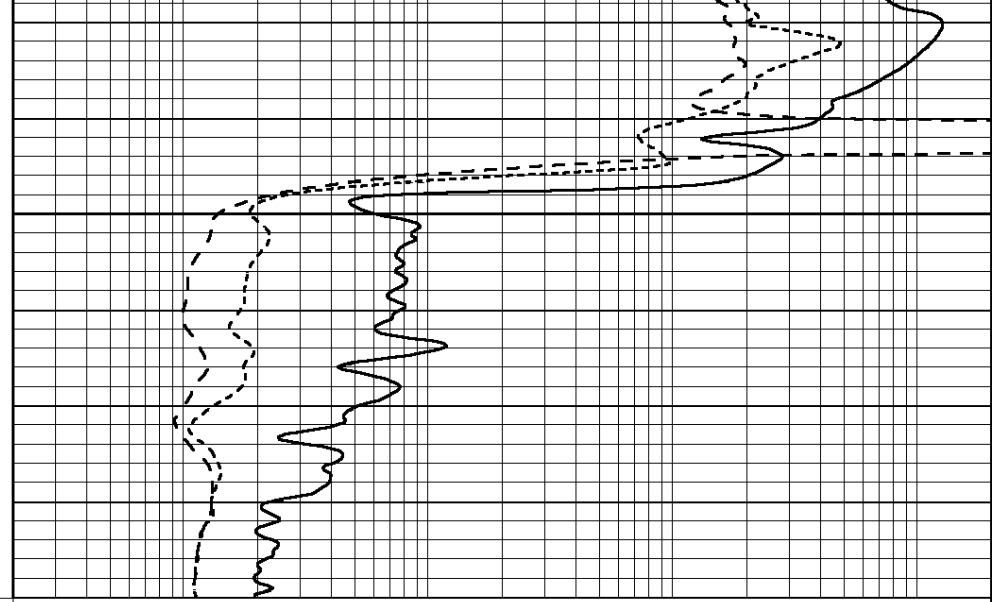
0	GAMMA RAY (GAPI)	150	0.2	RLL3 (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	RxoRt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			





2150

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20



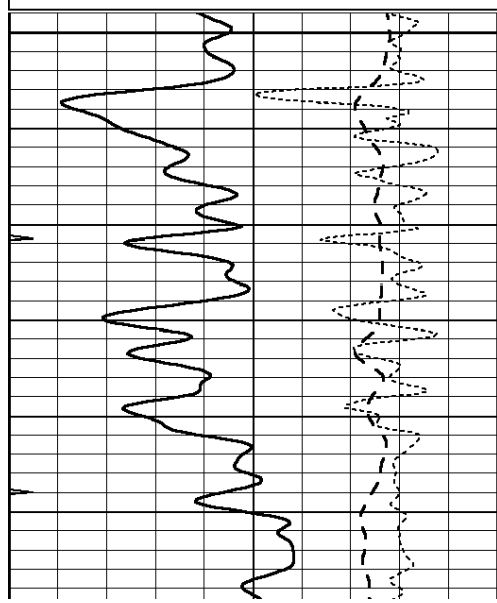
0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

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 Charted by: Depth in Feet scaled 1:240

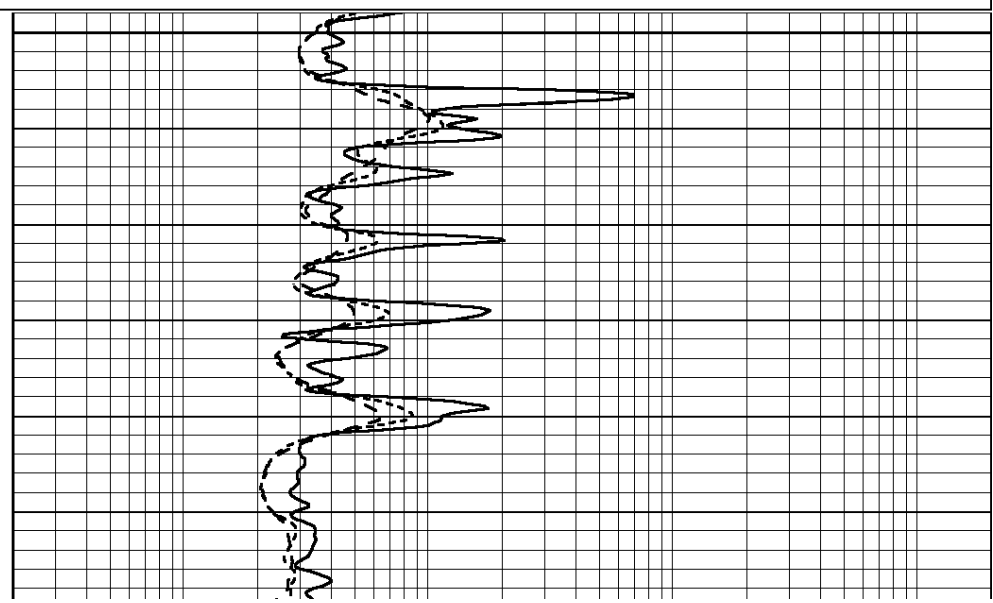
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

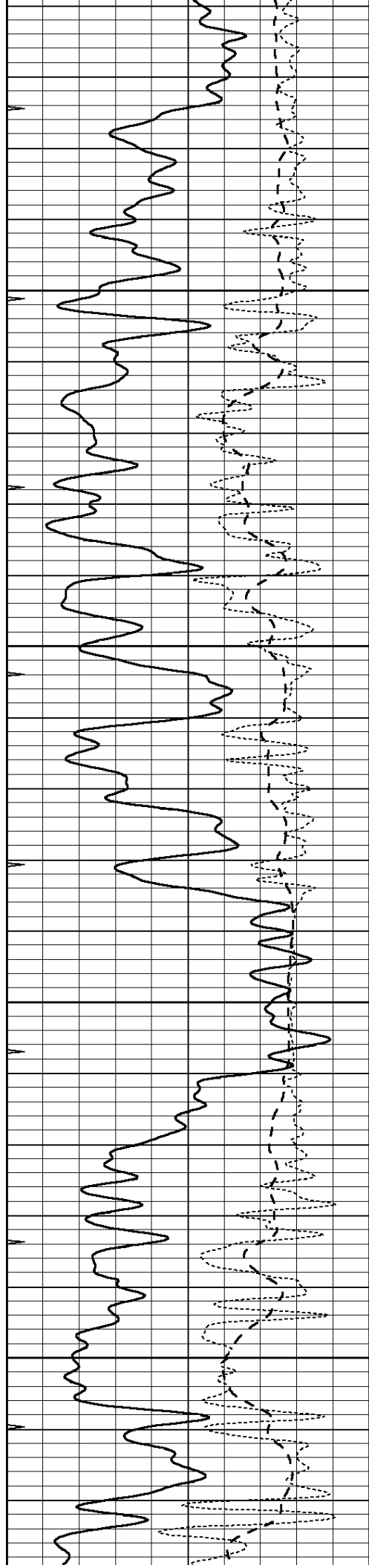
0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



3200

3250



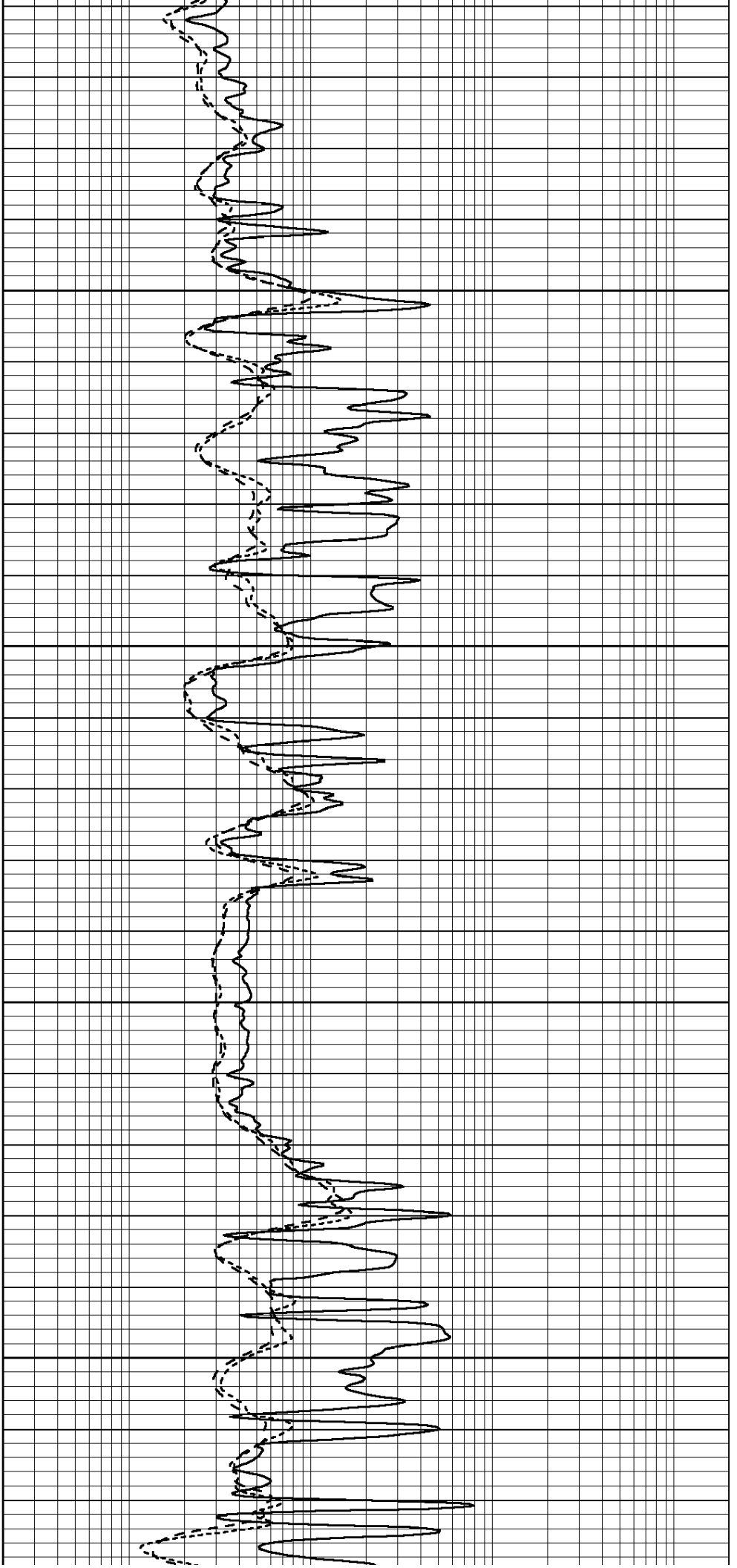


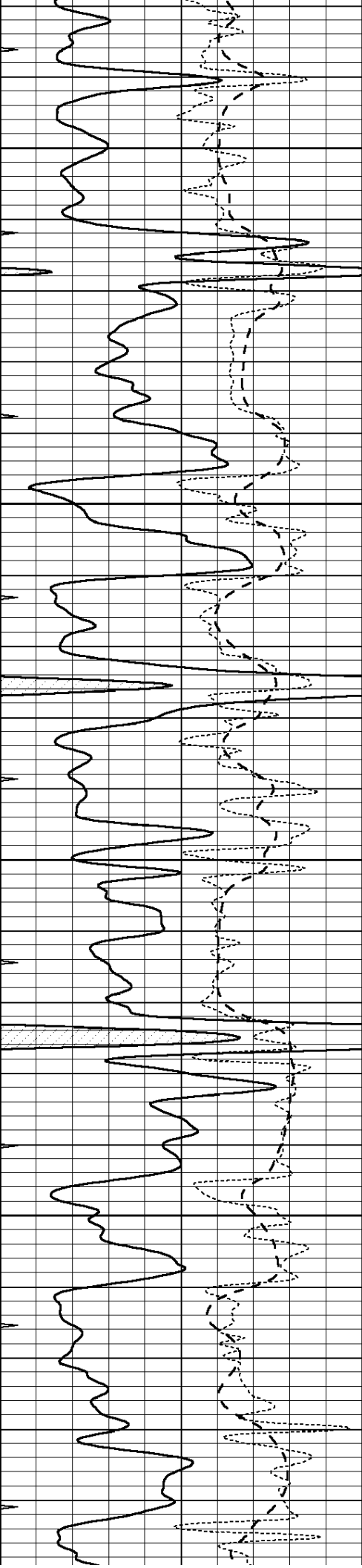
3300

3350

3400

3450



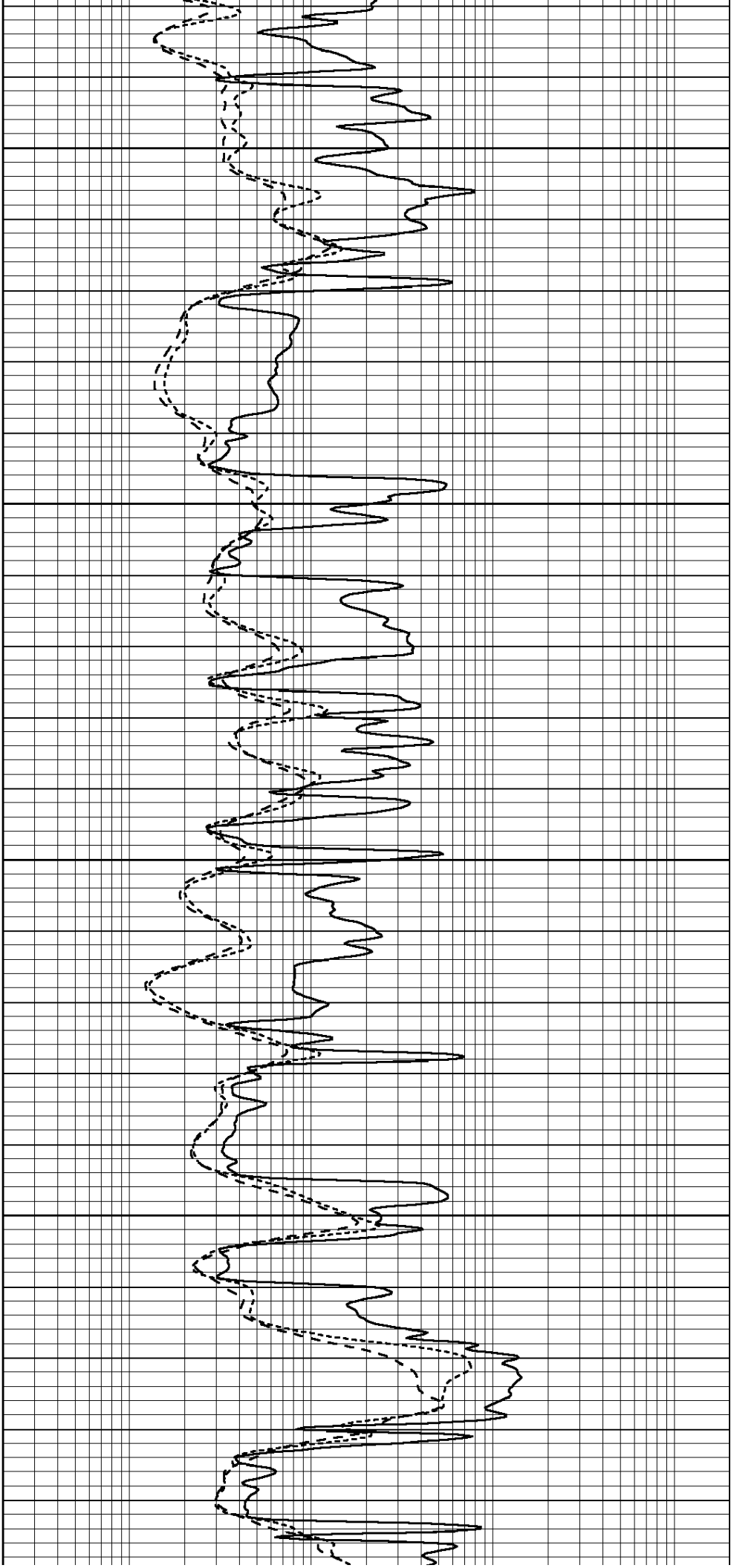


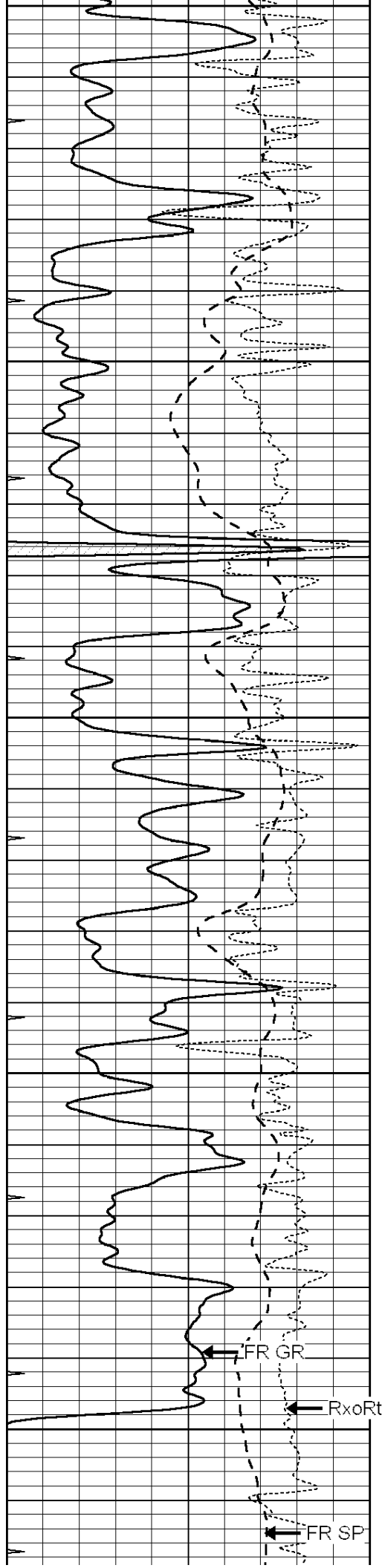
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3550

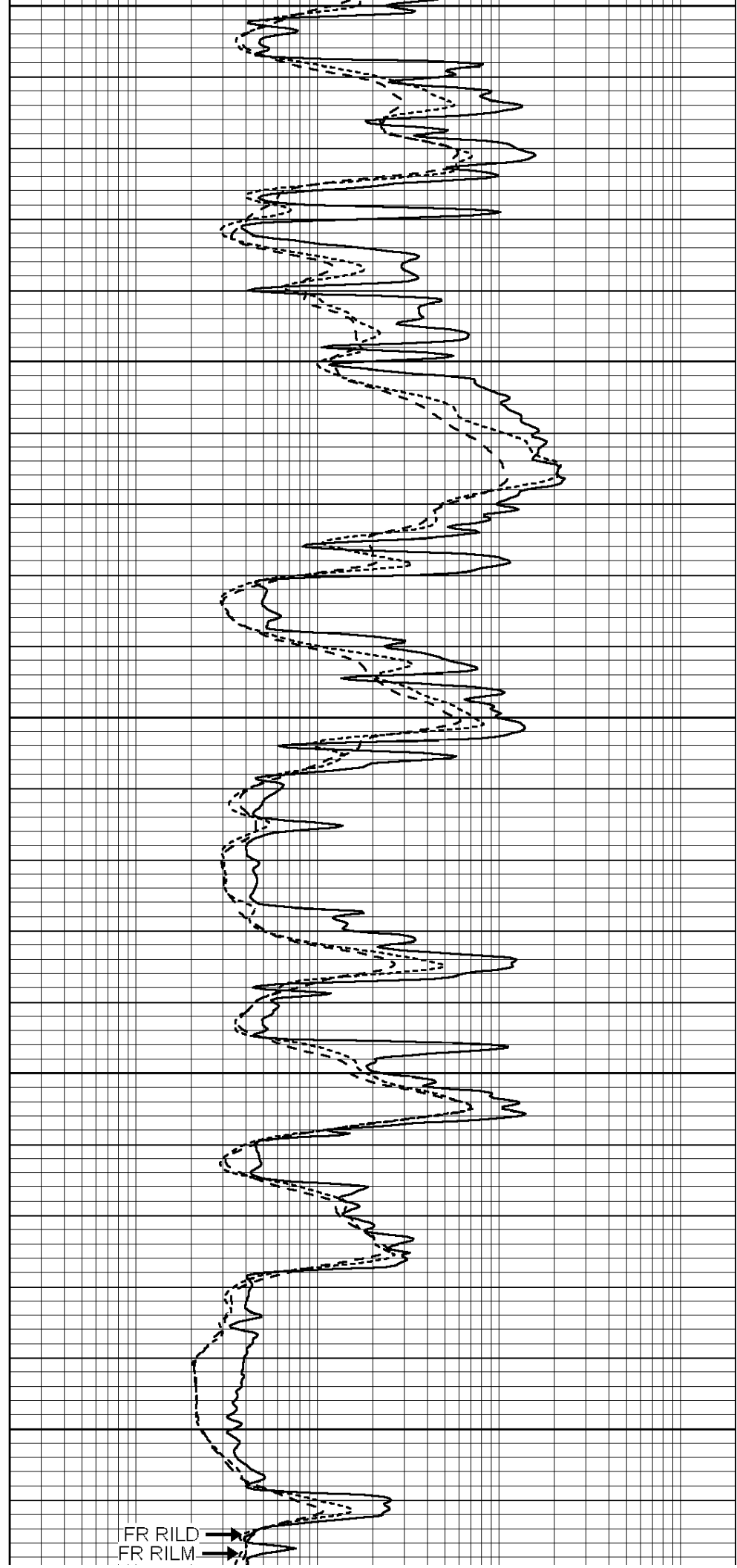
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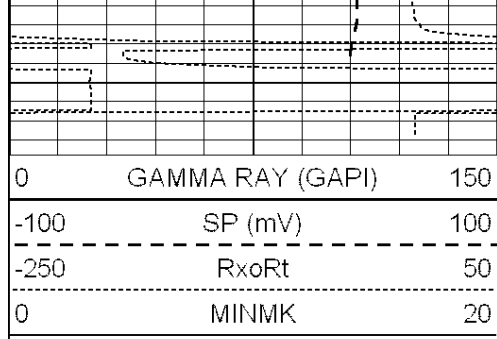
3650





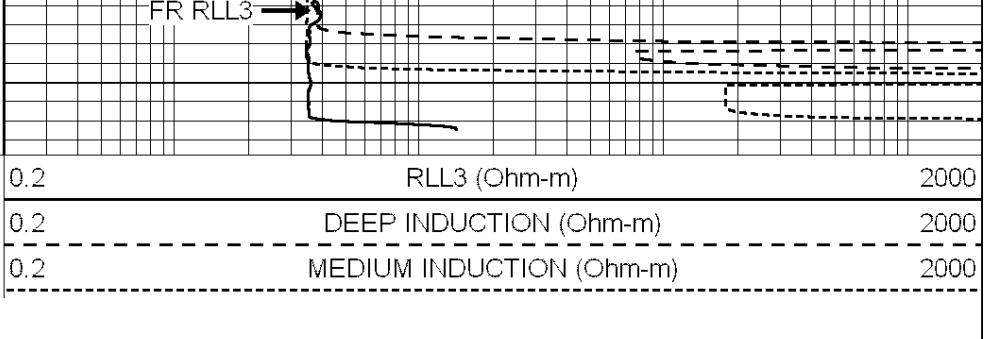
3700
3750
3800
3850
3900





LTD 3925

FR RLL3



0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

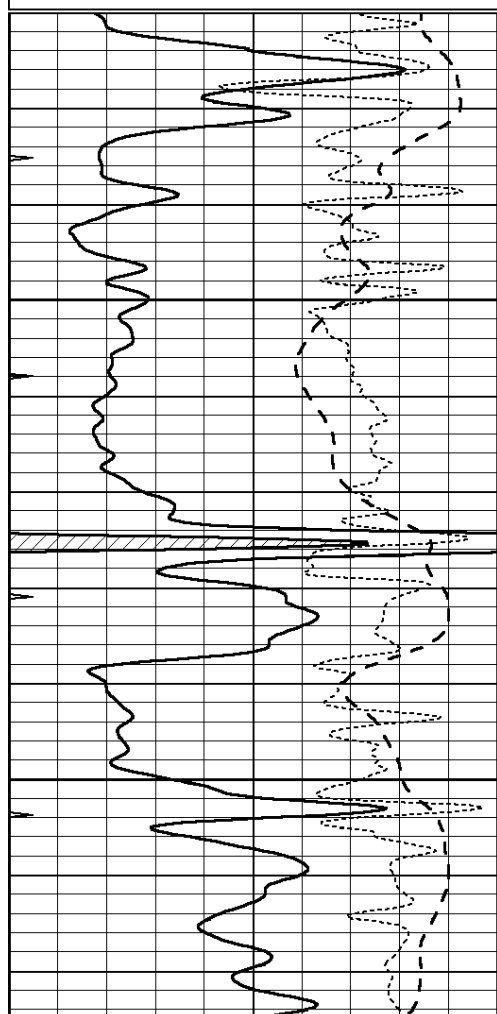


REPEAT SECTION

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 Charted by: Depth in Feet scaled 1:240

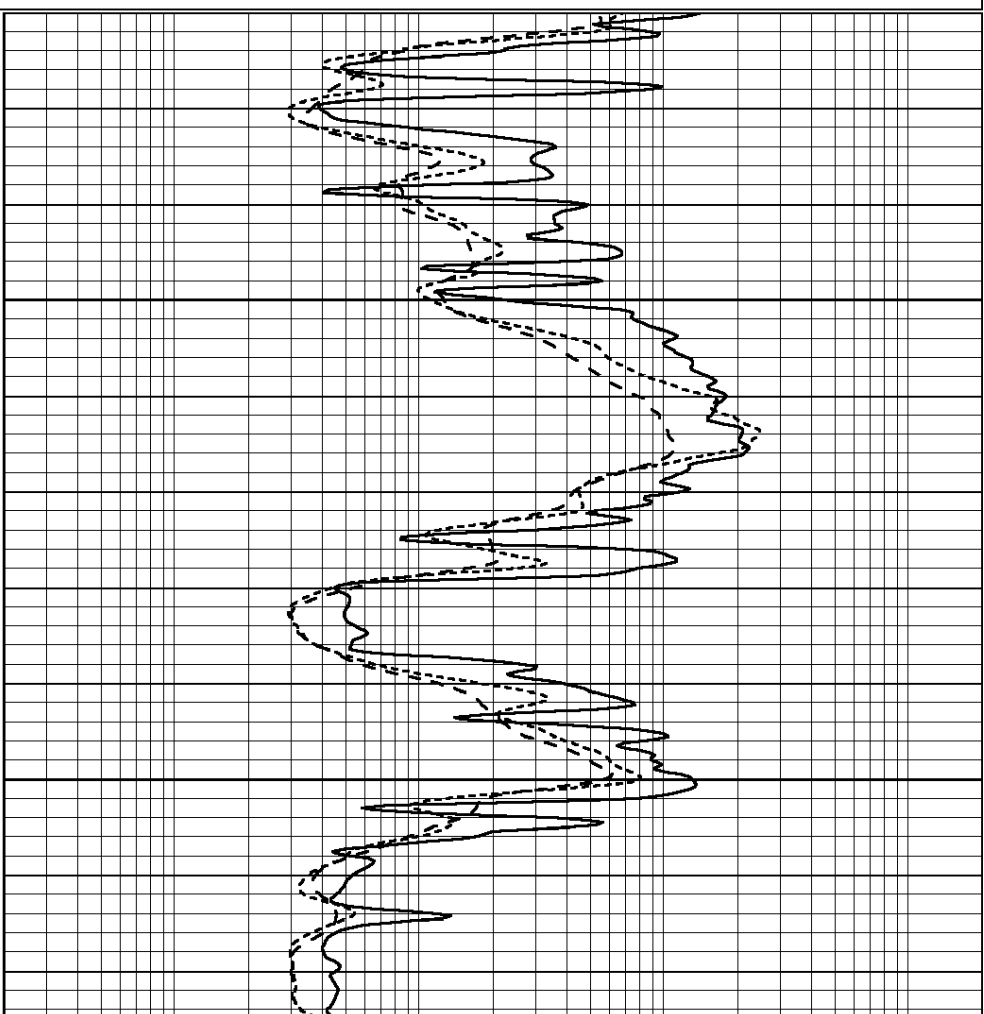
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

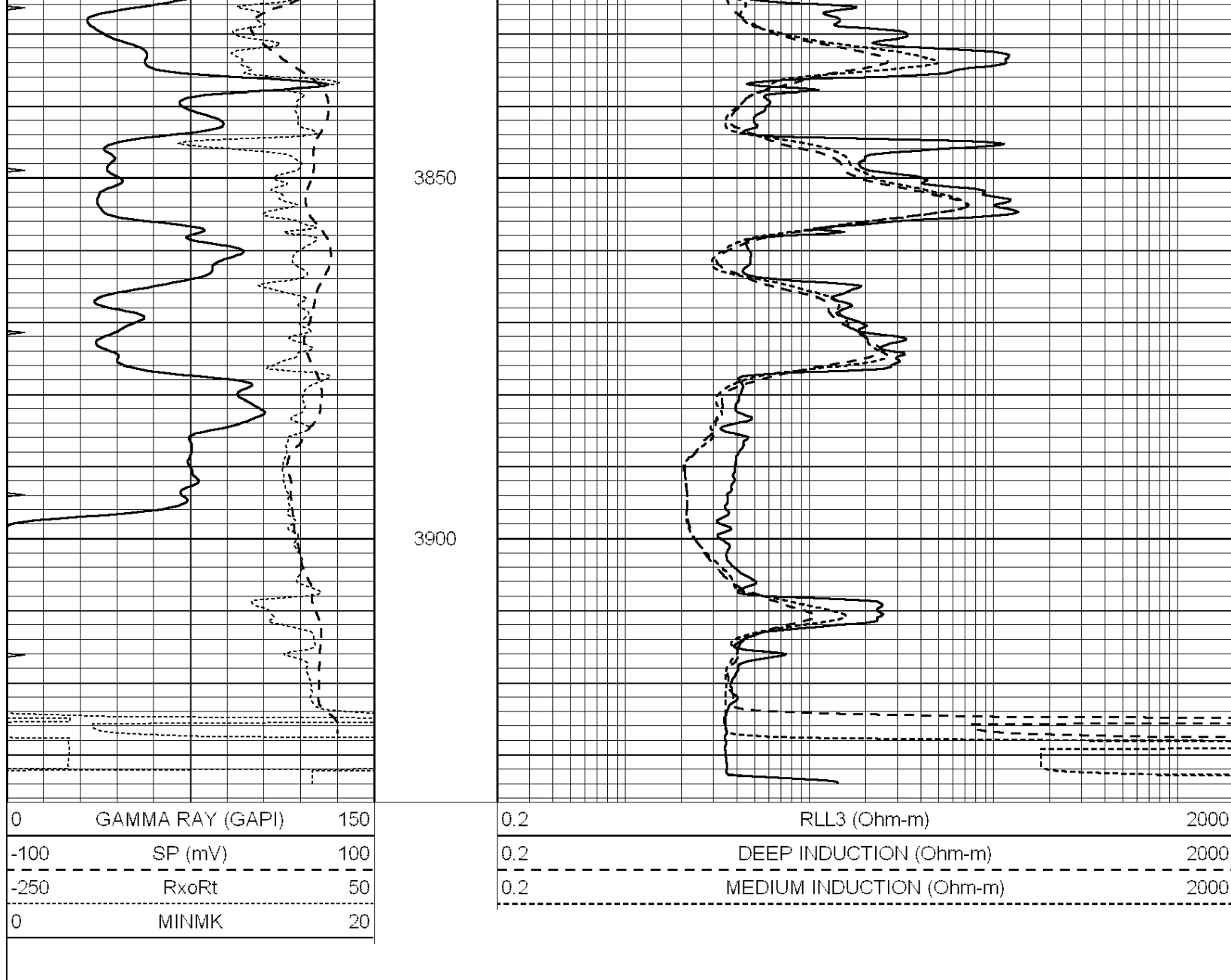
0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



3750

3800





Calibration Report

Database File: 010994ddn.db
 Dataset Pathname: pass4.4
 Dataset Creation: Thu May 02 00:32:56 2013

Dual Induction Calibration Report

Serial-Model: PROBE7-DILG
 Surface Cal Performed: Thu Apr 25 07:54:19 2013
 Downhole Cal Performed: Sat Jan 19 19:51:38 2013
 After Survey Verification Performed: Sat Jan 19 19:51:38 2013

Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.793	0.790	V	0.000	400.000	mmho/m	620.000	4.000
Medium	0.992	1.002	V	0.000	464.000	mmho/m	680.000	-42.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.041	0.642	V	0.000	400.000	mmho/m	664.874	-27.011
Medium	0.035	0.802	V	0.000	464.000	mmho/m	604.936	-21.367

Downhole Calibration			Readings		References		Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	135384.000	27094.500	mmho/m	135400.000	27082.400	mmho/m	1.000	-19.259
Medium	-47330.100	-9381.740	mmho/m	-47327.100	-9389.280	mmho/m	1.000	-10.154
LL3		7.322	V		1400.000	Ohm-m		
		0.038	V		20.000	Ohm-m		
		-7.273	V		4000.000	mmho-m		

After Survey Verification			Readings		Targets		Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	135384.000	27094.500	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	-47330.100	-9381.740	mmho/m	1.000	0.000
LL3		0.000	Ohm-m		1400.000	Ohm-m		
		0.000	Ohm-m		20.000	Ohm-m		
		0.000	mmho-m		4000.000	mmho-m		

Compensated Density Calibration Report

Serial-Model:	GEAR1-GEARHART
Source / Verifier:	147 / 147
Master Calibration Performed:	Thu Apr 25 08:46:02 2013

Master Calibration			Density	Far Detector	Near Detector
Magnesium	1.710	g/cc	1205.77	610.74	cps
Aluminum	2.600	g/cc	271.21	419.72	cps
Spine Angle = 75.89			Density/Spine Ratio = 0.579		
	Size		Reading		
Small Ring	7.60	in	4.69	V	
Large Ring	14.00	in	6.52	V	

Compensated Neutron Calibration Report

Serial Number:	NEU_4I
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:	GR5	
Tool Model:	OPEN	
Performed:	Fri Apr 26 22:00:59 2013	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	3.0000	GAPI/cps