



**NABORS**

**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**DUAL  
INDUCTION  
LOG**

Company CHARTER ENERGY, INC.  
Well GRANT UNIT #1  
Field  
County PAWNEE  
State KANSAS

Company CHARTER ENERGY, INC.  
Well GRANT UNIT #1  
Field  
County PAWNEE State KANSAS

Location: API # : 15-145-21691-00-00  
SEC 34 TWP 20S RGE 16W  
GROUND LEVEL Elevation 1997  
Log Measured From KELLY BUSHING 7' A.G.L.  
Drilling Measured From KELLY BUSHING  
Other Services  
CDL/CNL  
MEL/SONIC  
Elevation  
K.B. 2004  
D.F. 2002  
G.L. 1997

Date	10/26/12		
Run Number	ONE		
Depth Driller	3841		
Depth Logger	3838		
Bottom Logged Interval	3836		
Top Log Interval	00		
Casing Driller	8 5/8"@1010'		
Casing Logger	1002		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 9,000 PPM	
Density / Viscosity	9.6/61		
pH / Fluid Loss	9.0/9.2		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.65@70F		
Rmf @ Meas. Temp	0.49@70F		
Rmc @ Meas. Temp	0.78@70F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	0.40@114F		
Time Circulation Stopped	2.5 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	114F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	IAN MABB	JEFF GRONWEG	
Witnessed By	JIM MUSGROVE		

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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.

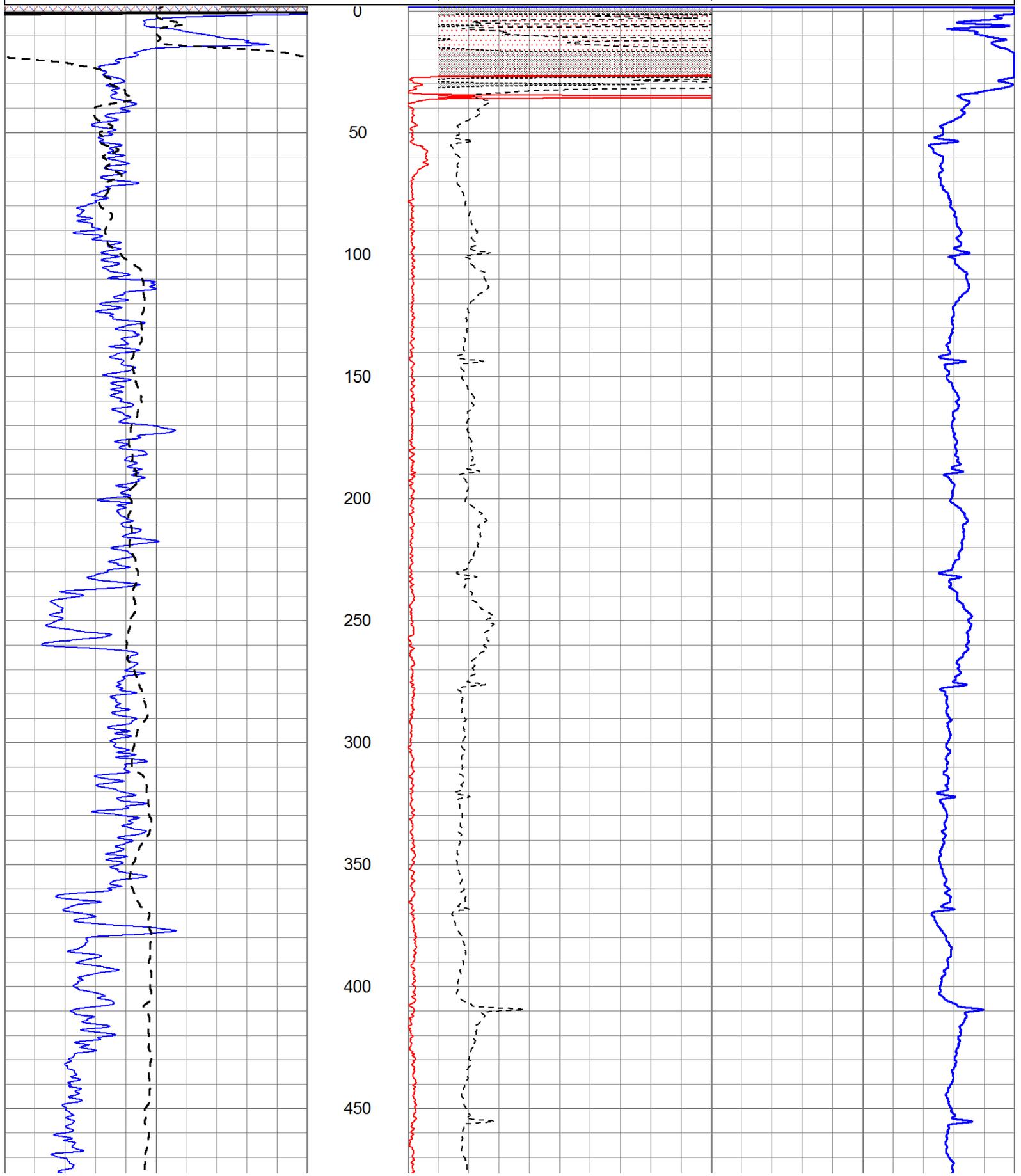
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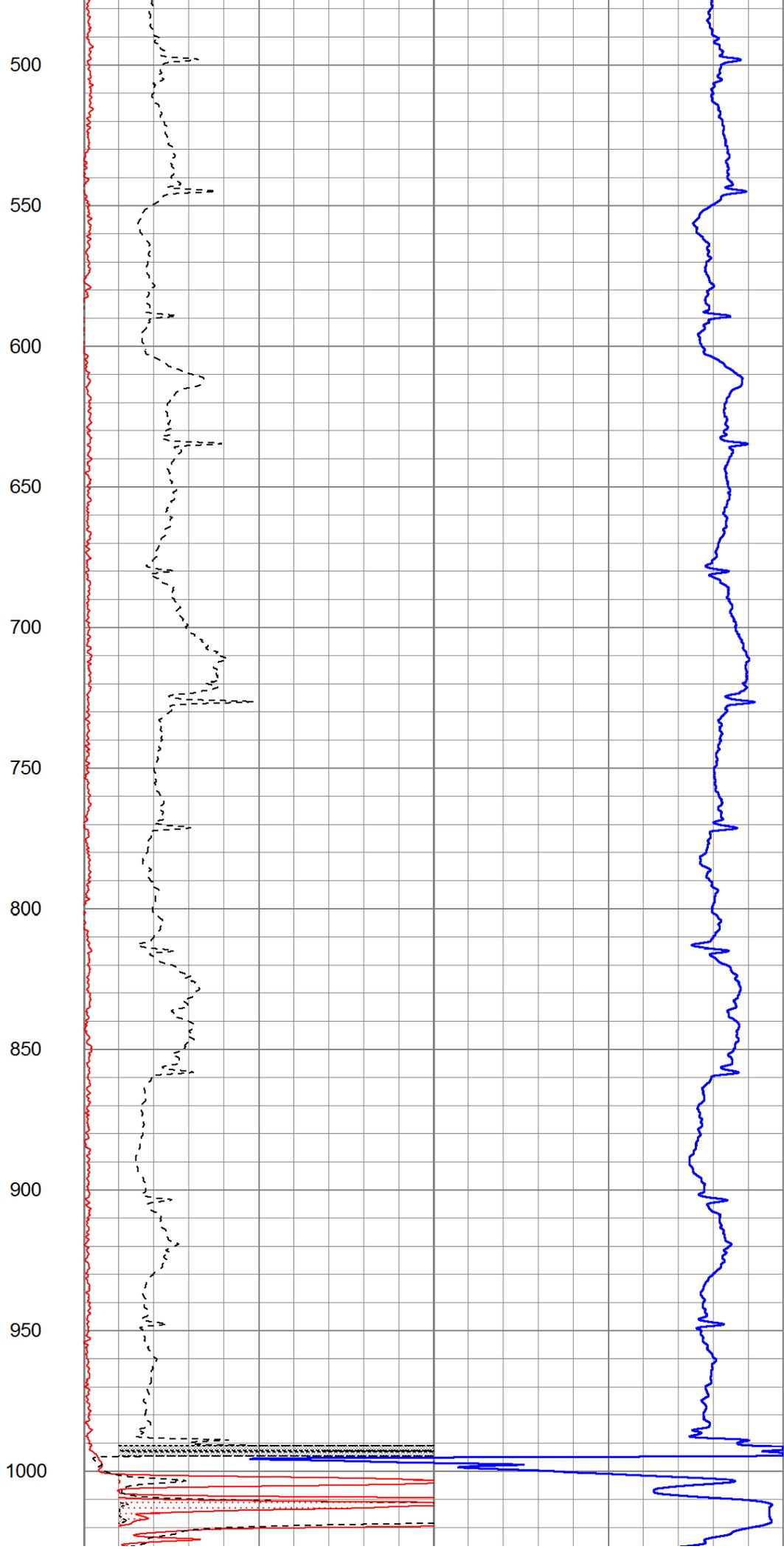
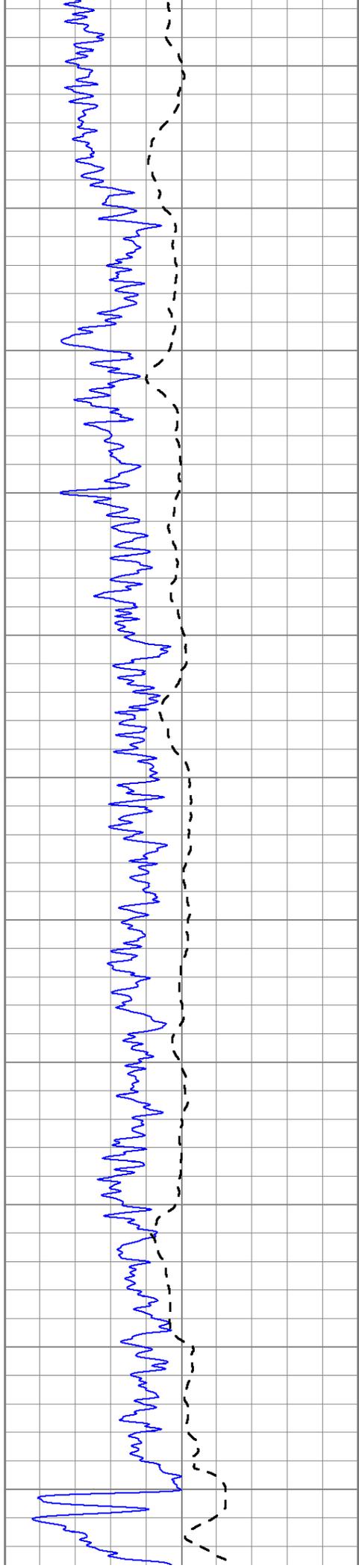
THANK YOU FOR USING SUPERIOR WELL SERVICE HAYS, KANSAS (785) 628-6395  
DIRECTIONS  
PAWNEE ROCK, KS. W ON SW 70 4 MILES, N 1 MILE, W 1 MILE , SOUTH INTO

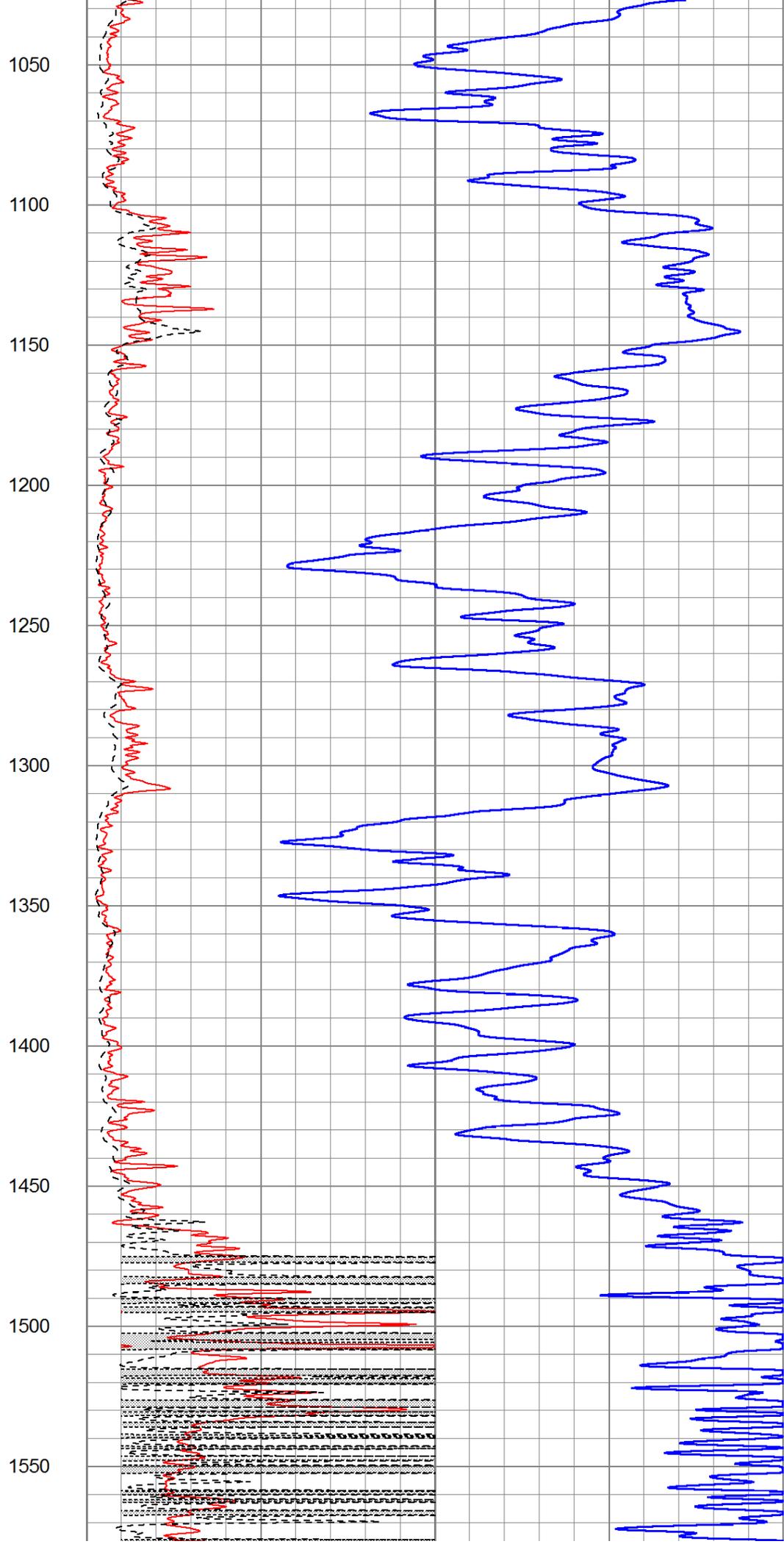
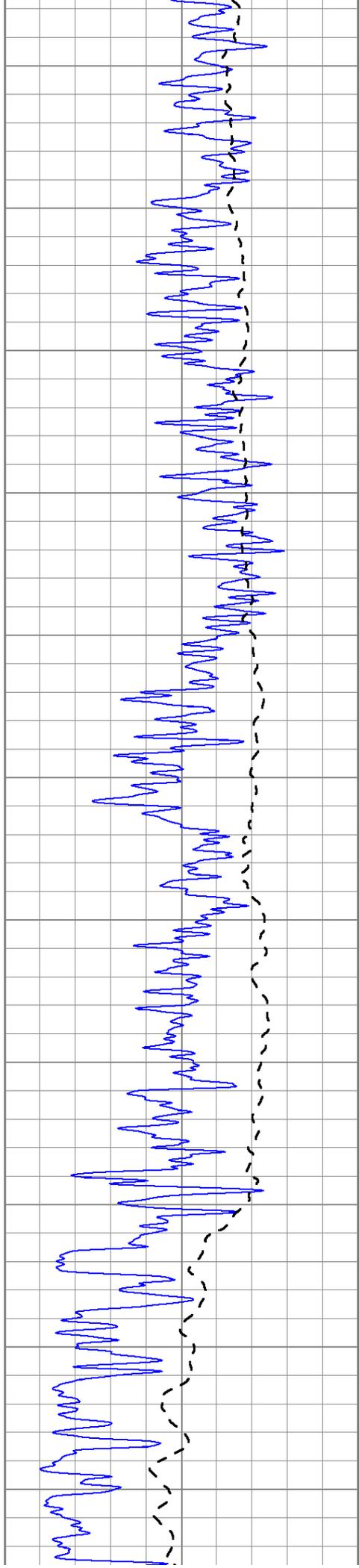
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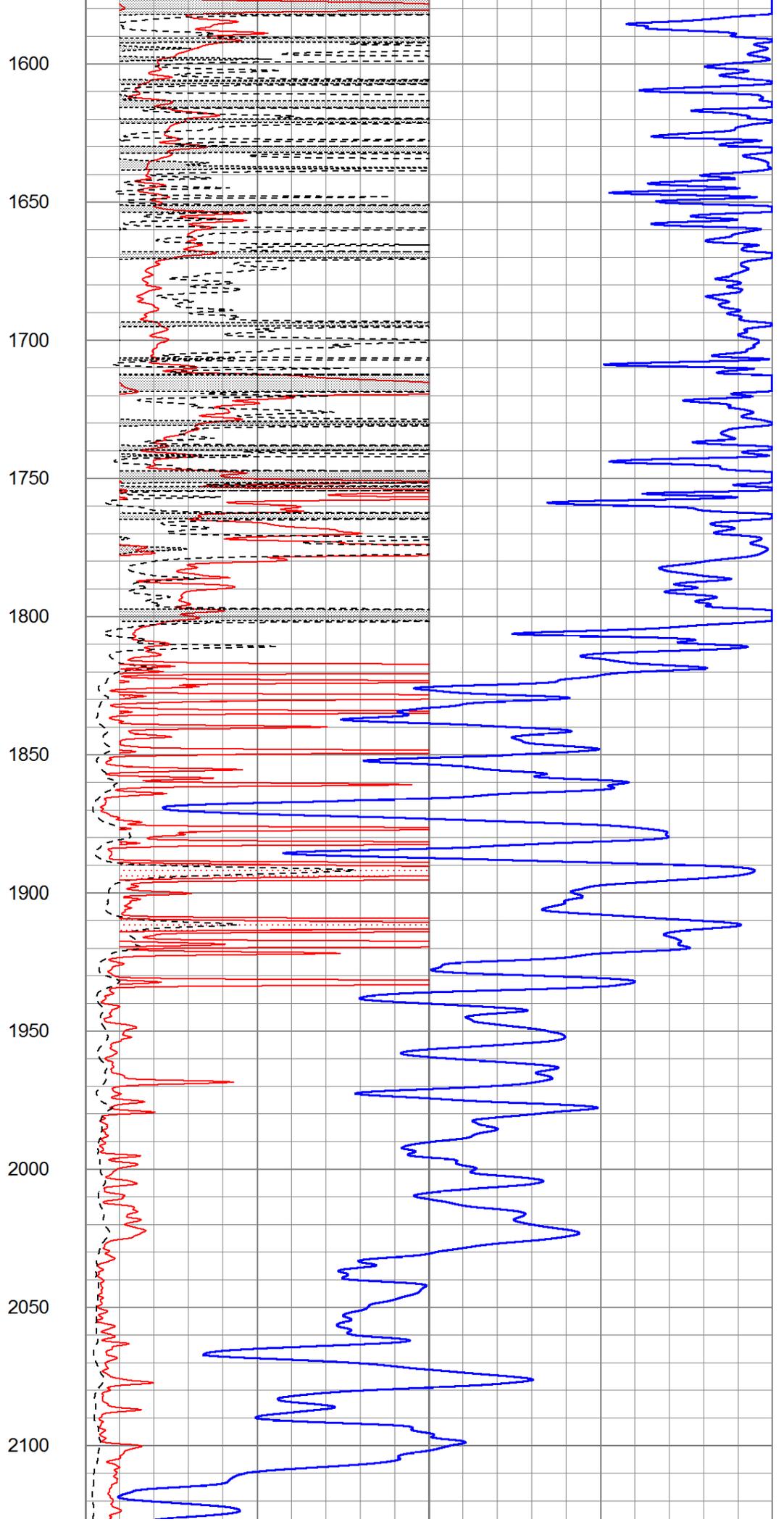
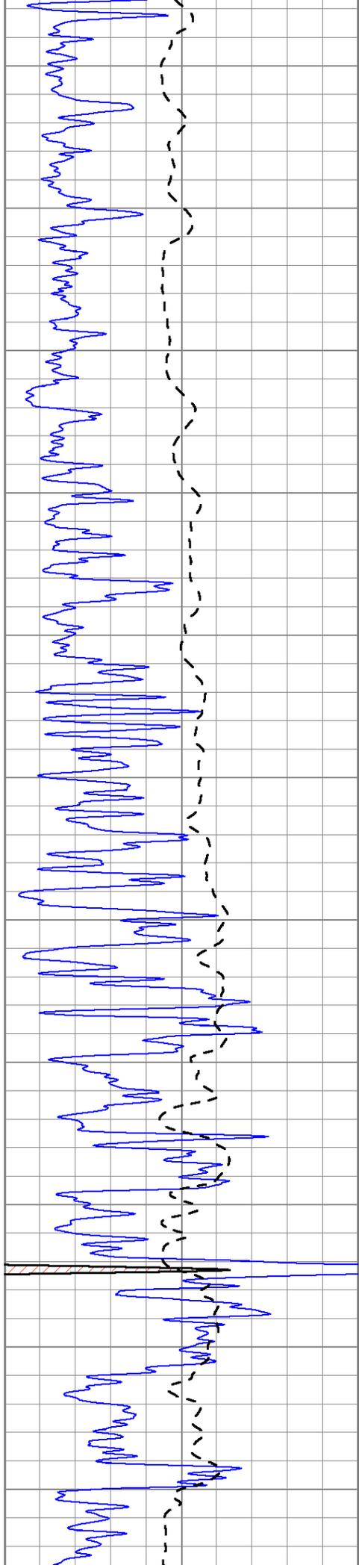
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-100	SP (mV)	100

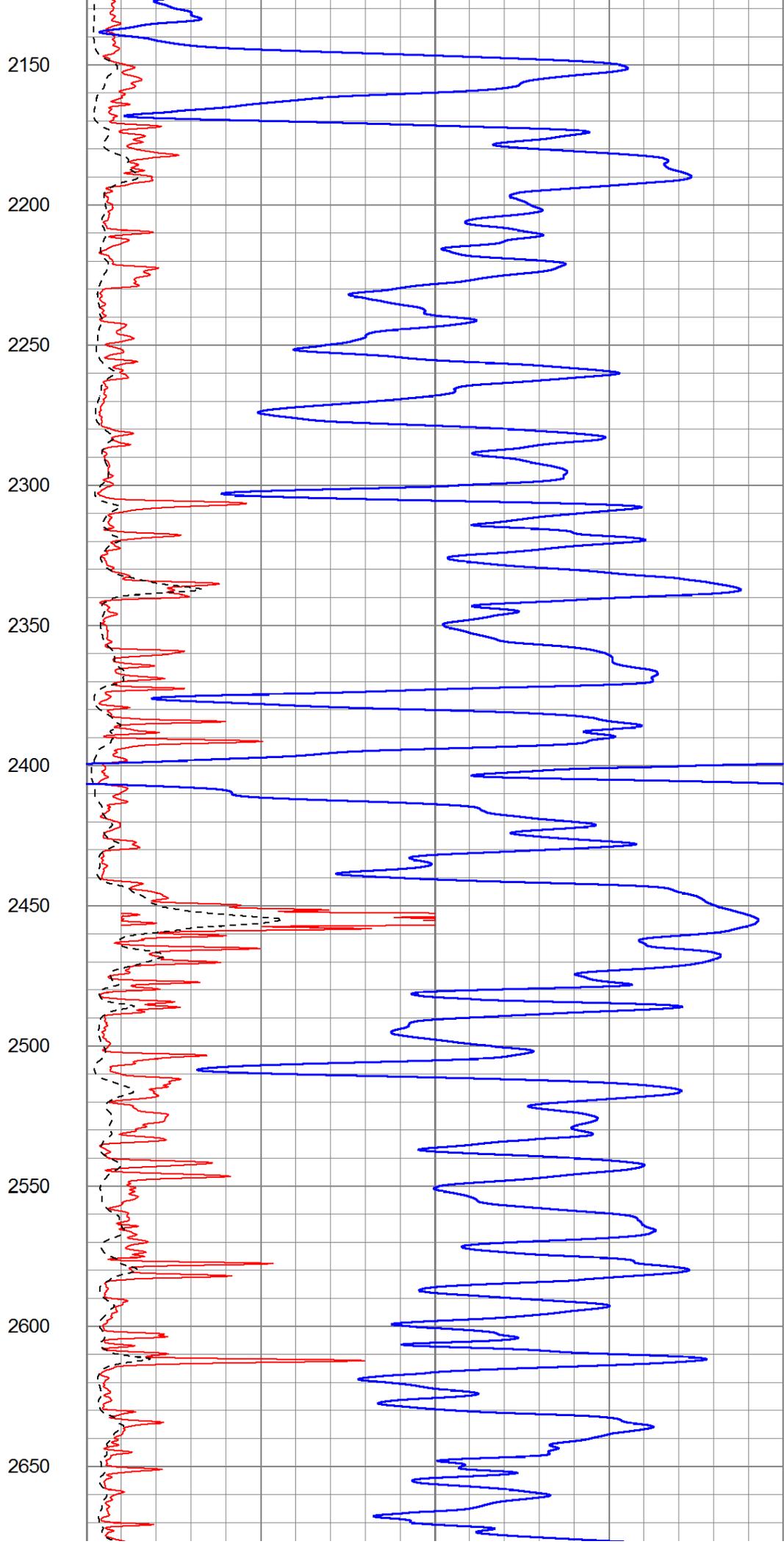
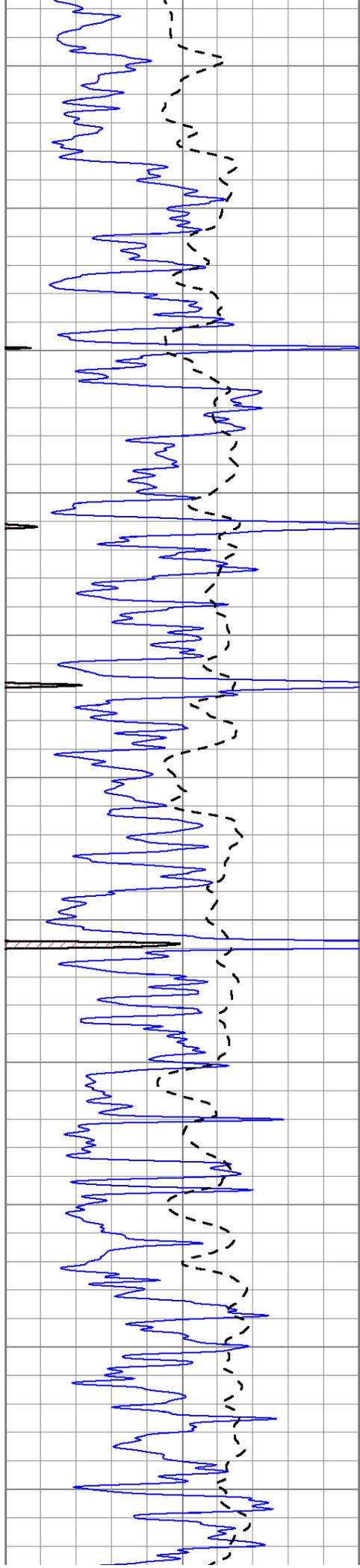
0	RLL3 (Ohm-m)	50
0	RILD (Ohm-m)	50
1000	CILD (mmho/m)	
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

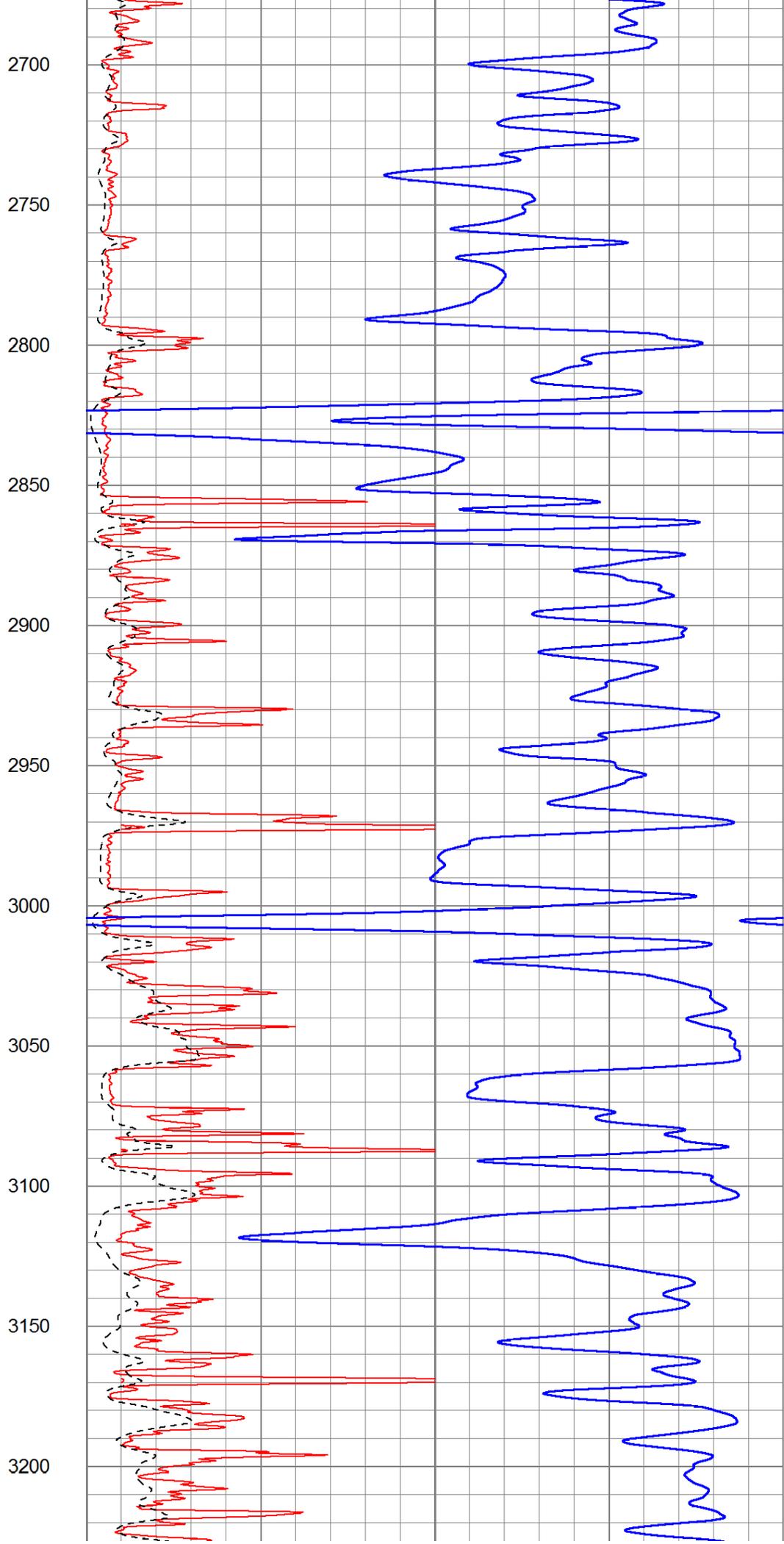
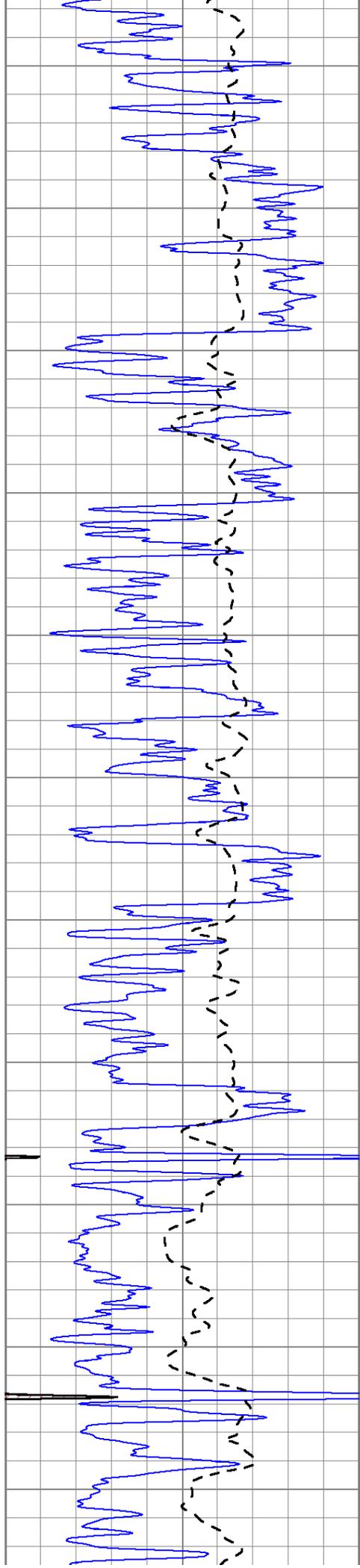


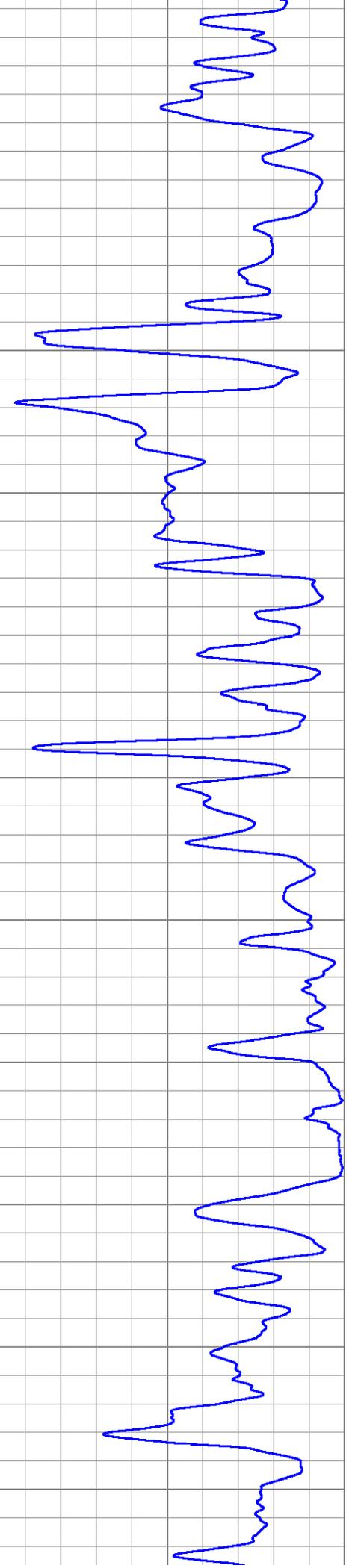
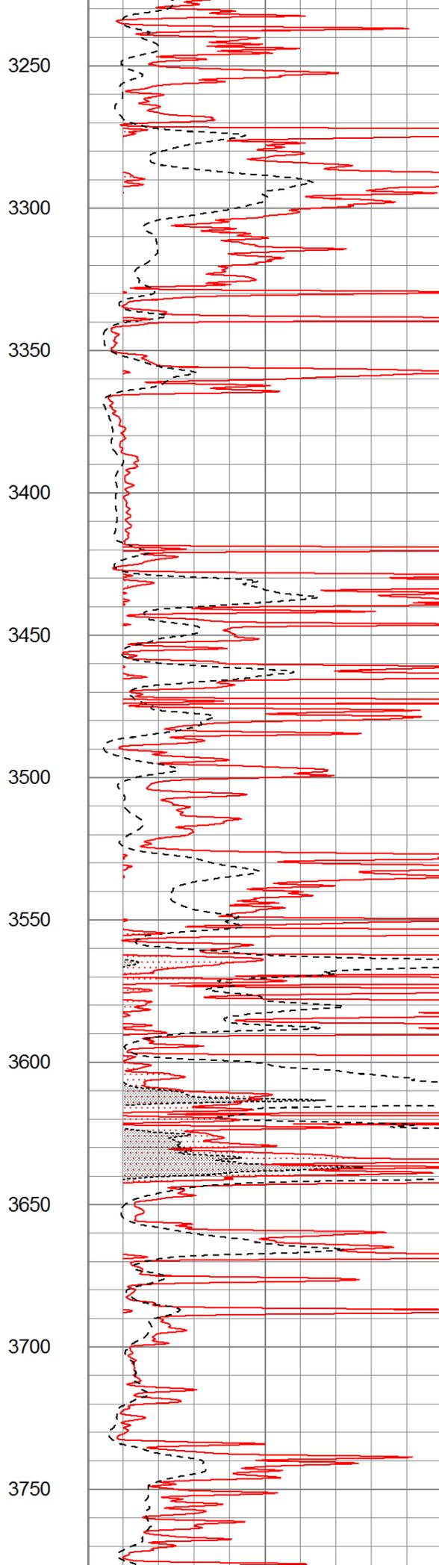
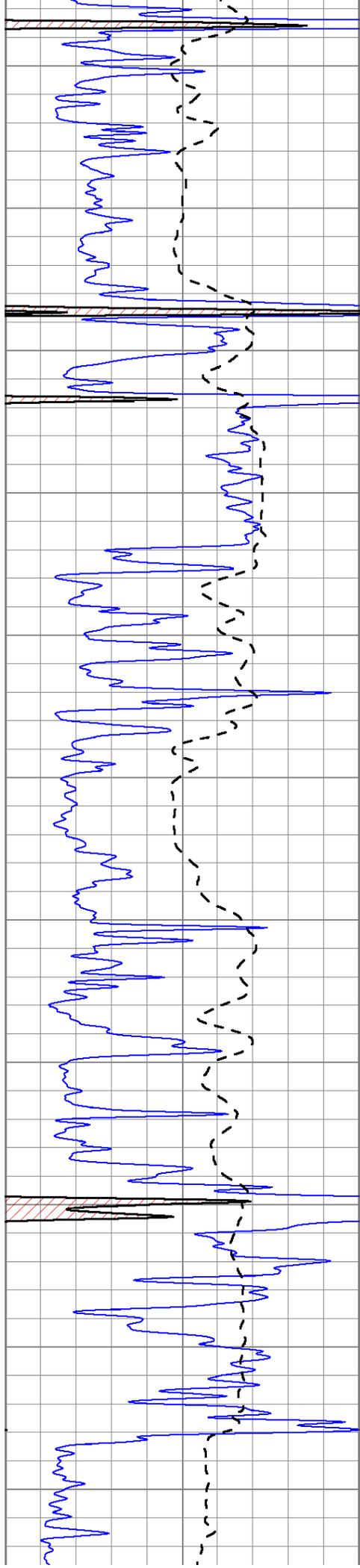


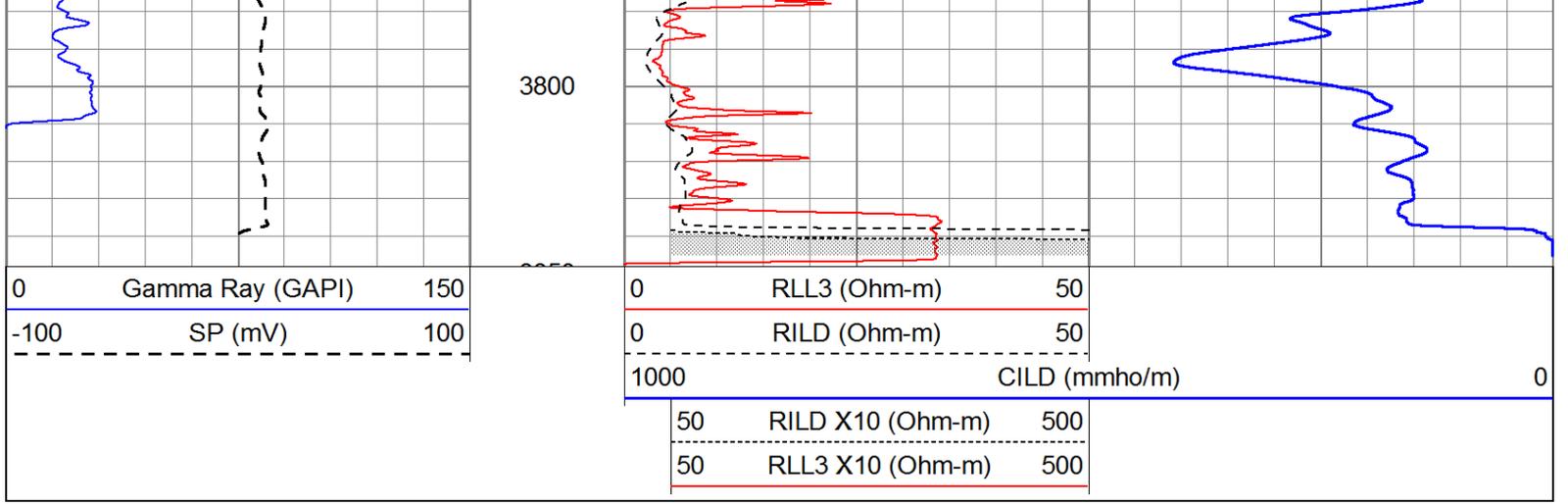






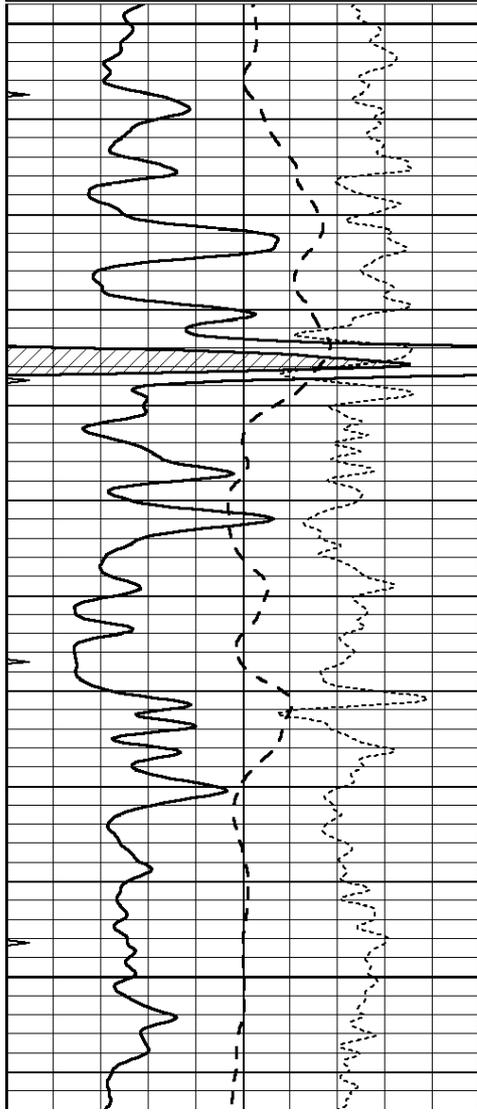






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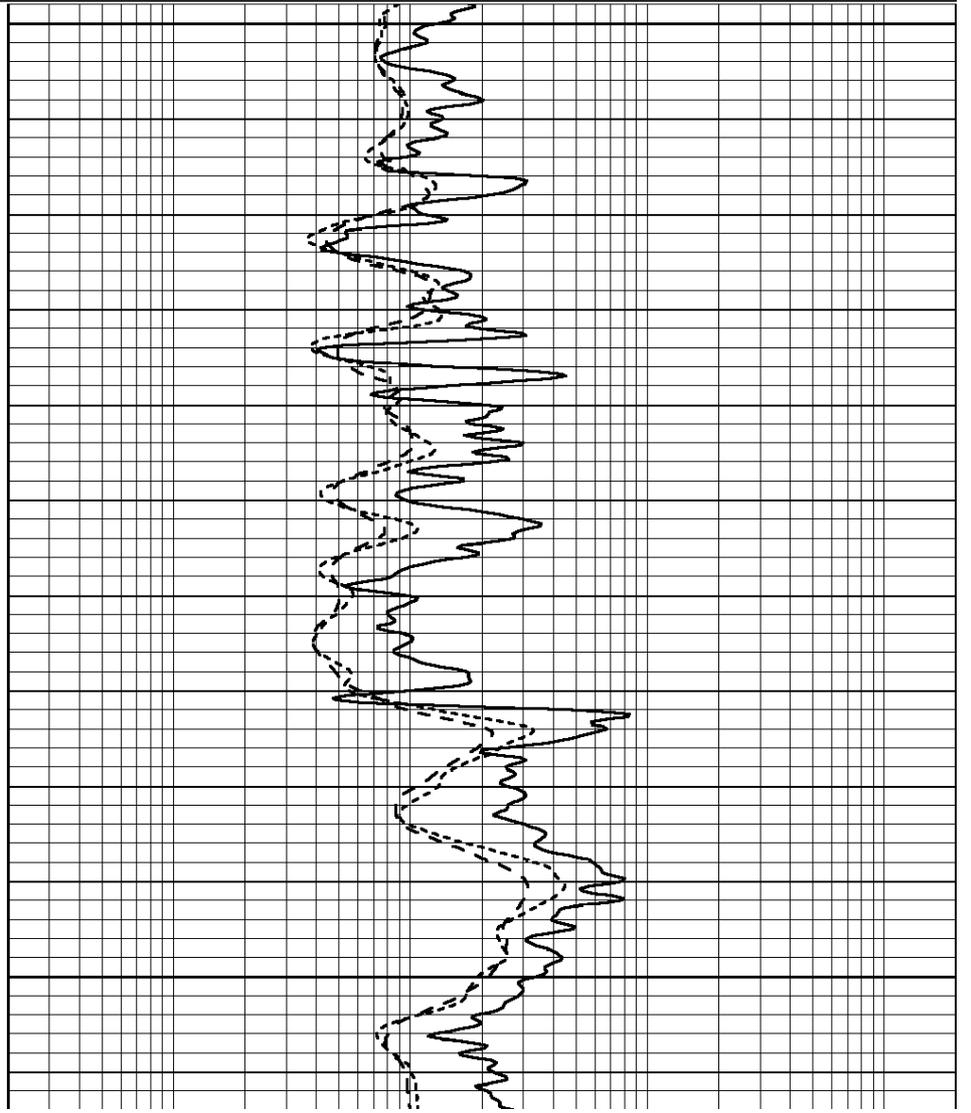
0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			

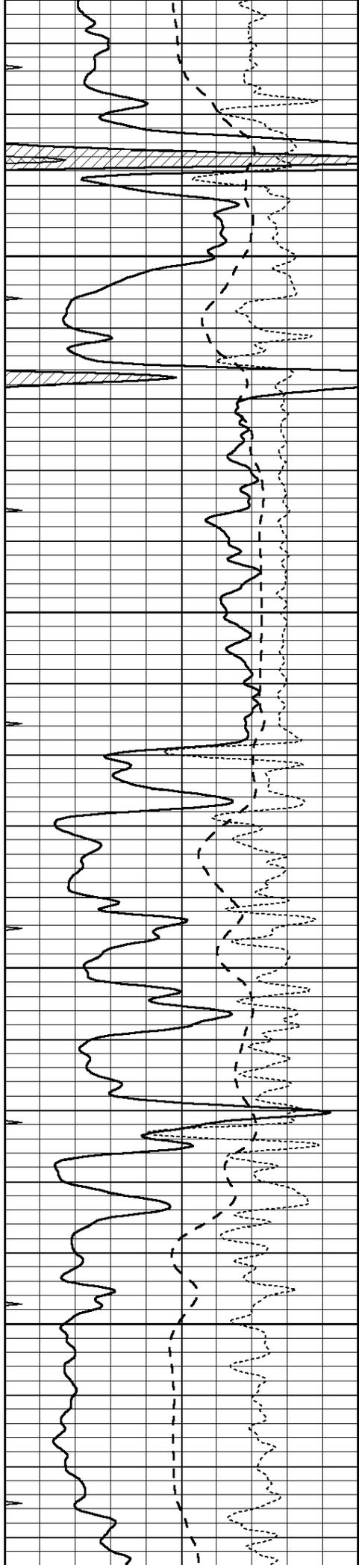


3200

3250

3300



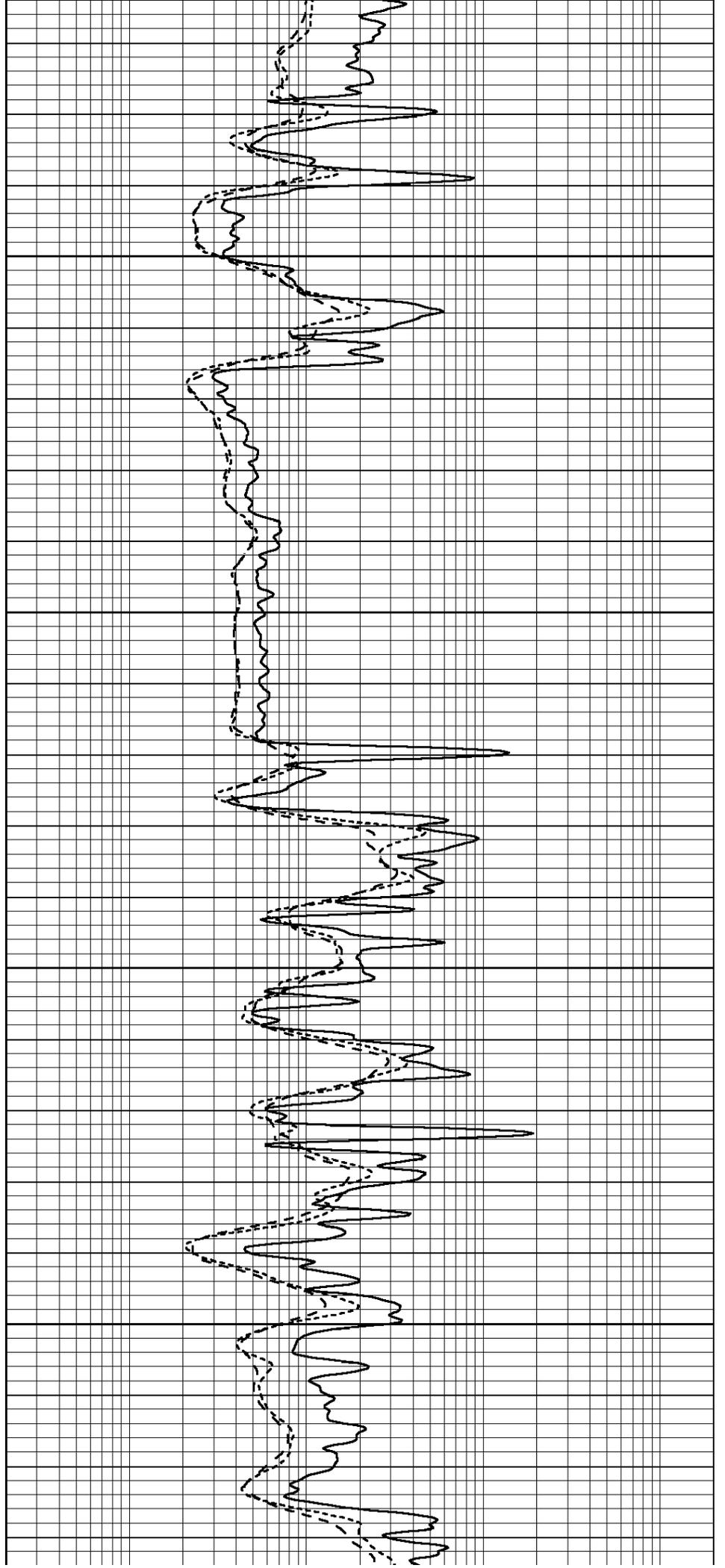


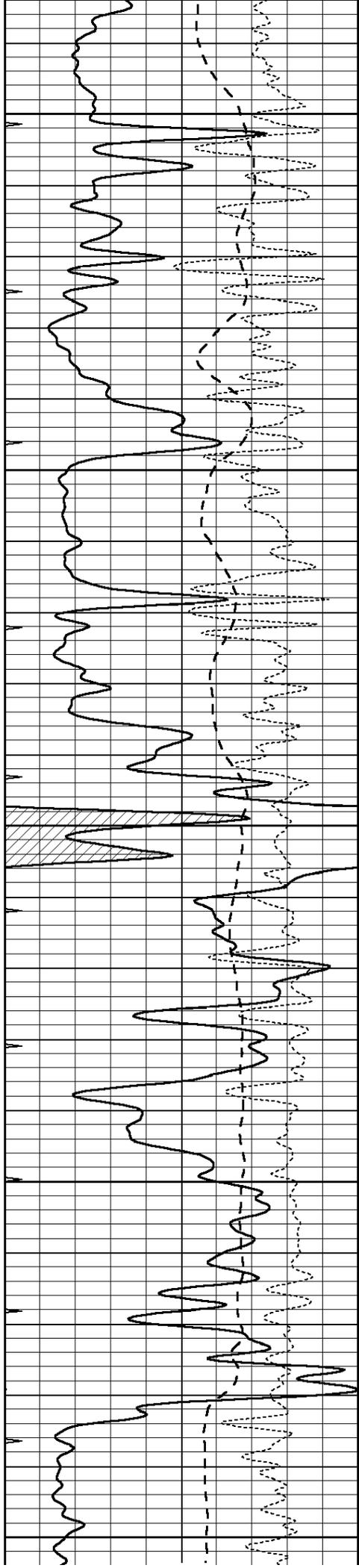
3350

3400

3450

3500





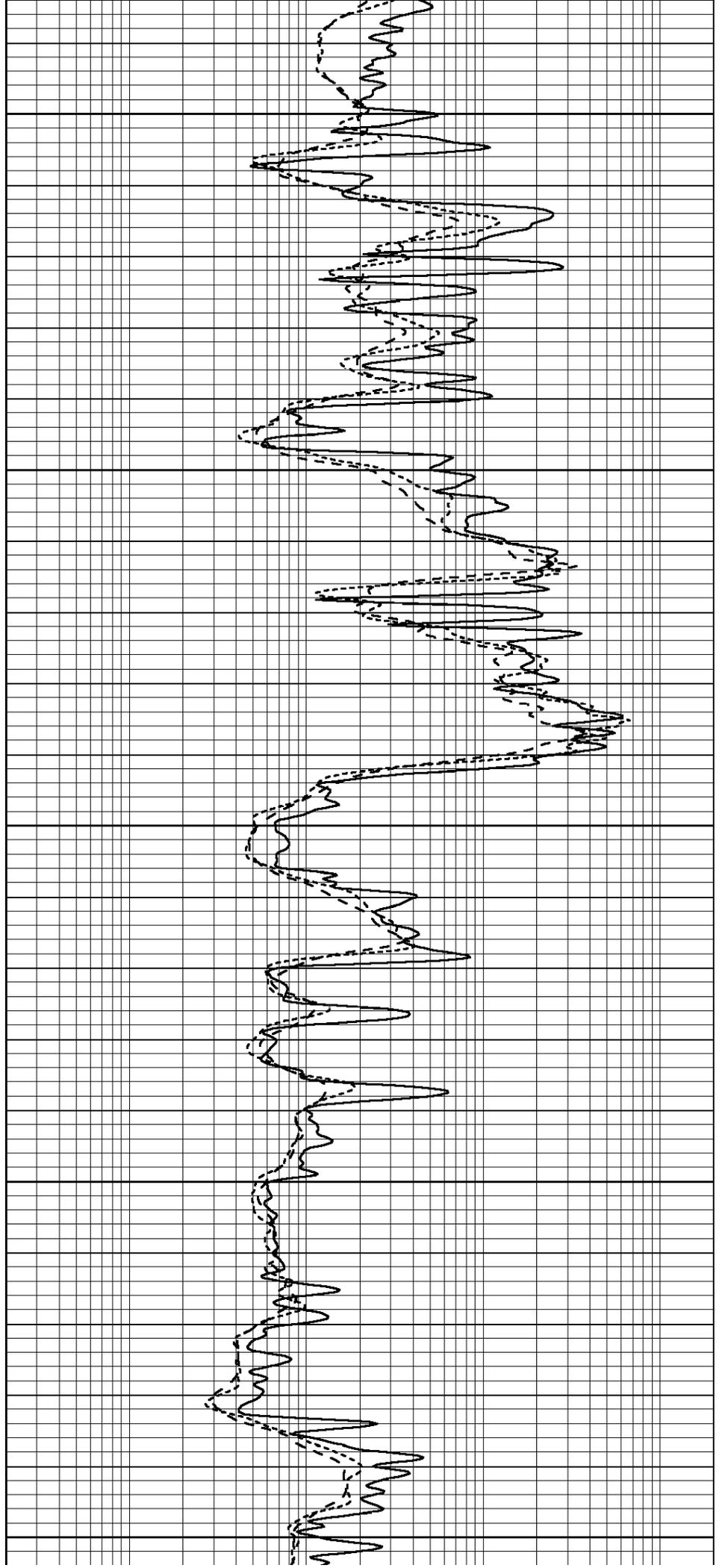
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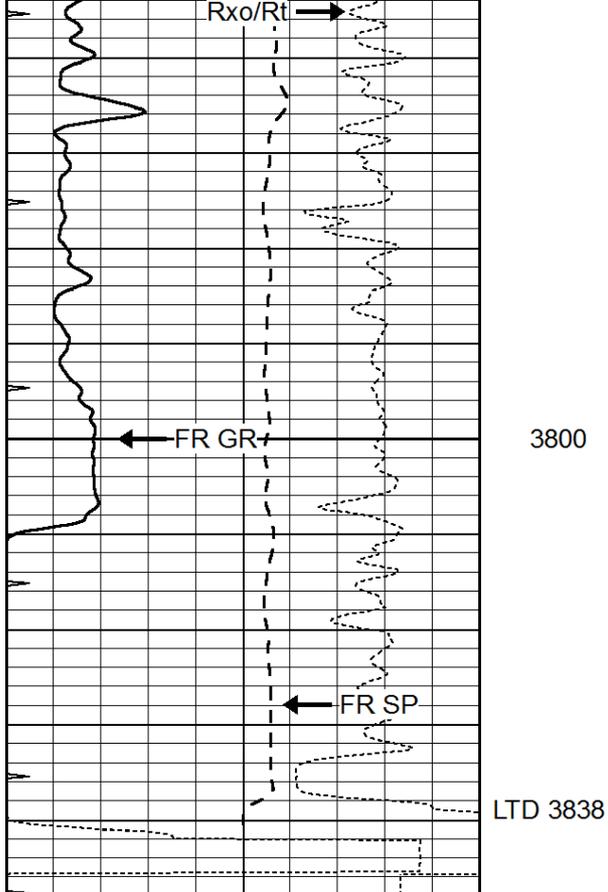
3600

3650

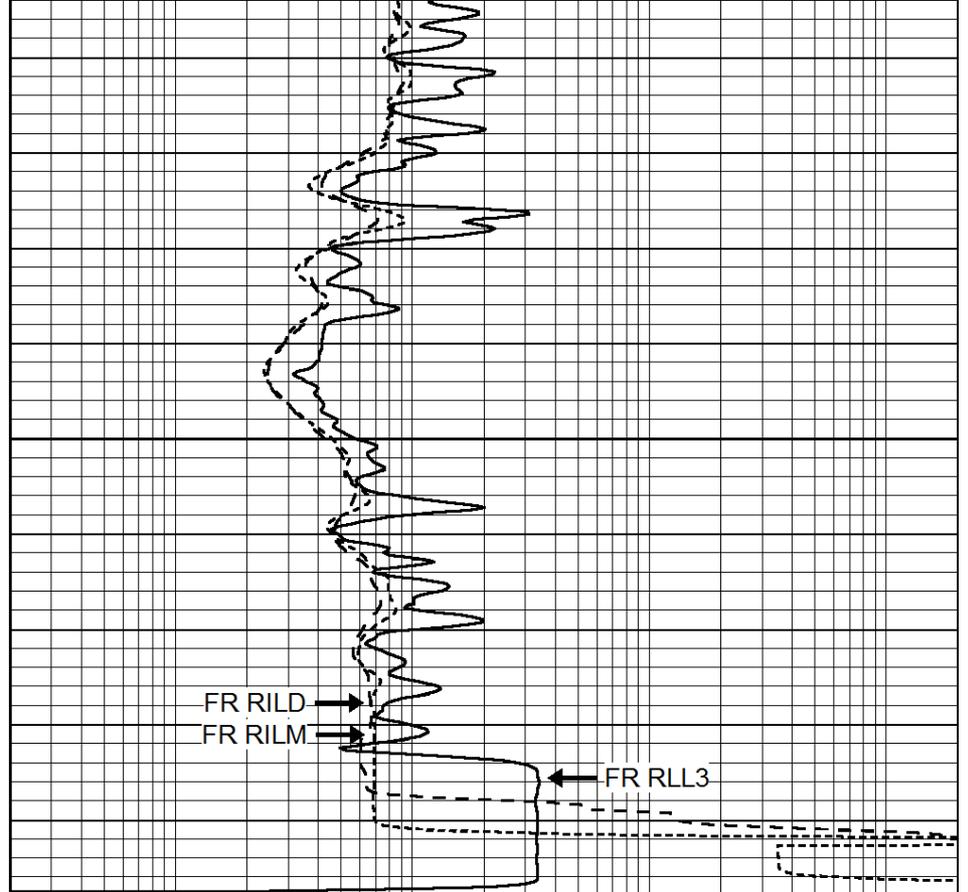
3700

3750





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

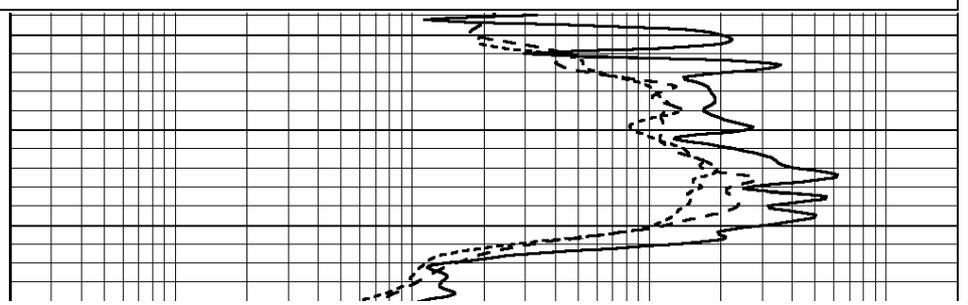
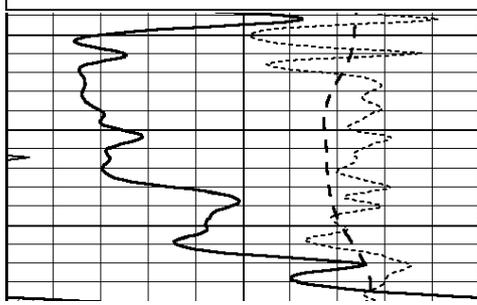


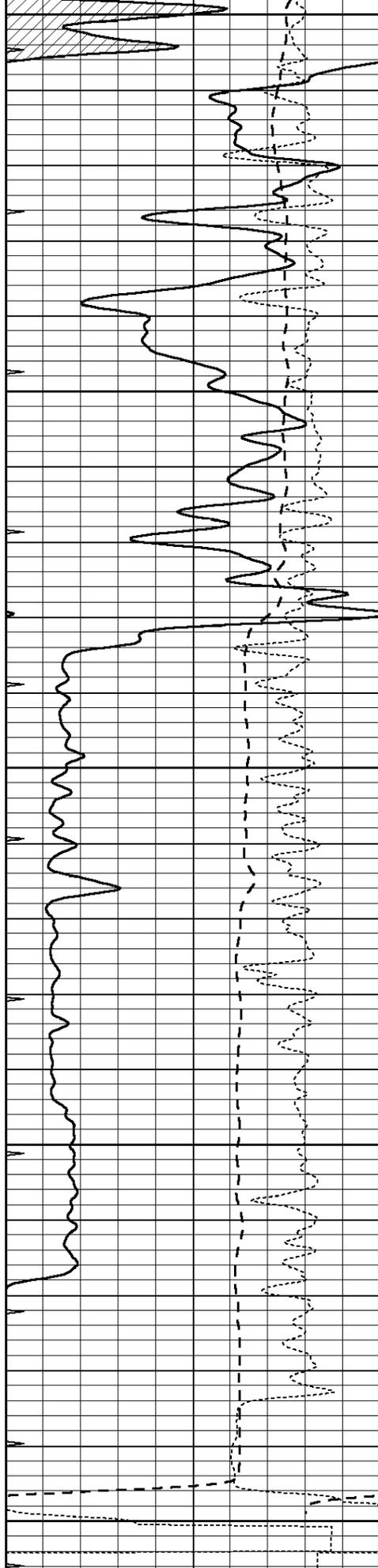
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 Charted by: Depth in Feet scaled 1:240

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

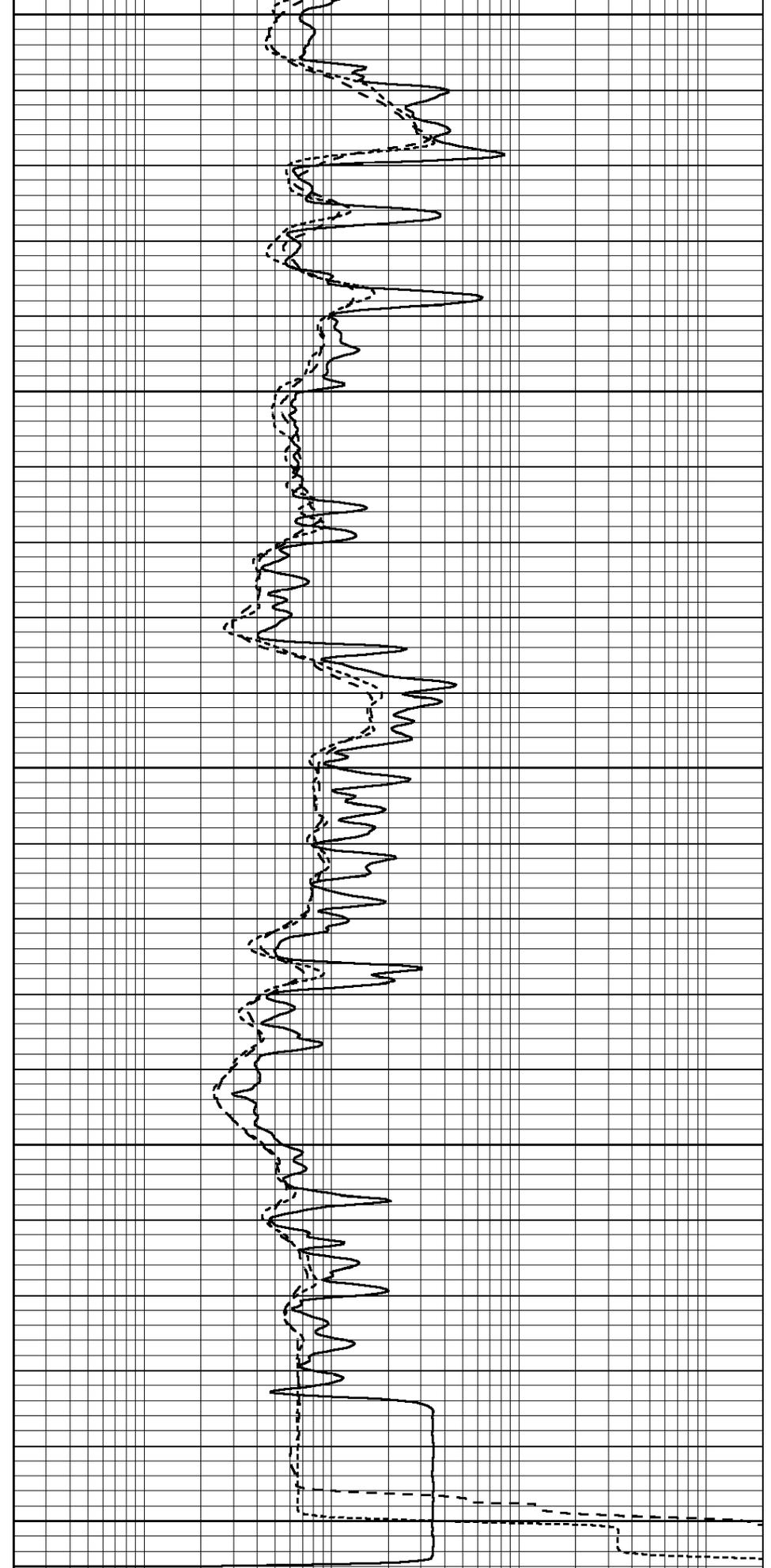
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000





3650  
3700  
3750  
3800  
3850

0 GAMMA RAY (GAPI) 150  
-100 SP (mV) 100  
250



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

250	Rx0/Rt	50
0	MINMK	20

0.2 MEDIUM INDUCTION (Ohm-m) 2000

Calibration Report

Database File: 9700ddn.db  
 Dataset Pathname: pass3.2  
 Dataset Creation: Fri Oct 26 03:42:11 2012 by Calc Open-Cased 110302

Dual Induction Calibration Report

Serial-Model: DIL3-GEAR  
 Performed: Wed Oct 24 10:22:26 2012

Loop:	Readings				References		Results	
	Air	Loop			Air	Loop	m	b
Deep	0.011	0.656	V	0.000	400.000	mmho/m	640.000	9.000
Medium	0.013	0.740	V	0.000	462.500	mmho/m	700.000	-5.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.002	0.645	V	0.000	400.000	mmho/m	622.059	-1.071
Medium	0.007	0.740	V	0.000	462.500	mmho/m	631.393	-4.555

Litho Density Calibration Report  
 Serial: 006 Model: PRB  
 Performed Sun Aug 15 09:48:41 2010

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	1686.6	11612.8	3932.0	12718.8	cps
Window 2	1531.4	9204.7	3267.8	9851.9	cps
Window 3	1198.3	4733.6	1952.5	4920.6	cps
Window 4	317.3	321.2	325.9	303.6	cps
Long Space	0.0	7673.3	1736.4	8320.4	cps
Short Space	1.7	2548.5	1657.2	2628.8	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	
Rib Angle	: 43.8	Rib Slope	: 0.961	Density/Spine Ratio	: 0.569
Spine Angle	: 73.8	Spine Slope	: 3.453	Spine Intercept	: -18.1

Caliper

	Readings	Reference	
Low Ref	3.5	6.7	
High Ref	5.5	15.0	
Gain: 4.3			Offset: -8.5

Compensated Neutron Calibration Report

Serial Number: 070808  
 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:	070559		
Tool Model:	OPEN_GR		
Performed:	Wed Sep 19 15:58:00 2012		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.3000	GAPI/cps	