



Pioneer Energy Services

Dual Induction Log

API No.	15-135-25492-00-00	
Company	Cobalt Energy, LLC	
Well	Miner Unit 'A' #1-27	
Field	McDonald NE	
County	Ness	State
Location	2428' FSL & 1756' FEL	
	Sec: 27	Twp: 18S Rge: 24W
Other Services	CNL/CDL	
Elevation	K.B. 2289 D.F. 2284 G.L. 2284	

Permanent Datum	Ground Level	Elevation 2284
Log Measured From	Kelly Bushing	5 Ft. Above Perm. Datum
Drilling Measured From	Kelly Bushing	
Date	10/26/2012	
Run Number	One	
Depth Driller	4365	
Depth Logger	4366	
Bottom Logged Interval	4365	
Top Log Interval	200	
Casing Driller	8.625 @ 218	
Casing Logger	218	
Bit Size	7.875	
Type Fluid in Hole	Chemical	
Salinity, ppm CL	3600	
Density / Viscosity	9.1	47
pH / Fluid Loss	9.5	6.4
Source of Sample	Flowline	
Rm @ Meas. Temp	0.68 @	50
Rmf @ Meas. Temp	0.51 @	50
Rmc @ Meas. Temp	0.92 @	50
Source of Rmf / Rmc	Charts	
Rm @ BHT	0.28 @	122
Operating Rig Time	3 Hours	
Max Rec. Temp. F	122	
Equipment Number	91	
Location	Hays	
Recorded By	D. Schmidt	
Witnessed By	Robert Hendrix	

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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

Thank you for using Log-Tech, Inc.
 (785) 625-3858
 Ness City (West edge),
 2 West to P Rd, 1/3 North,
 West into

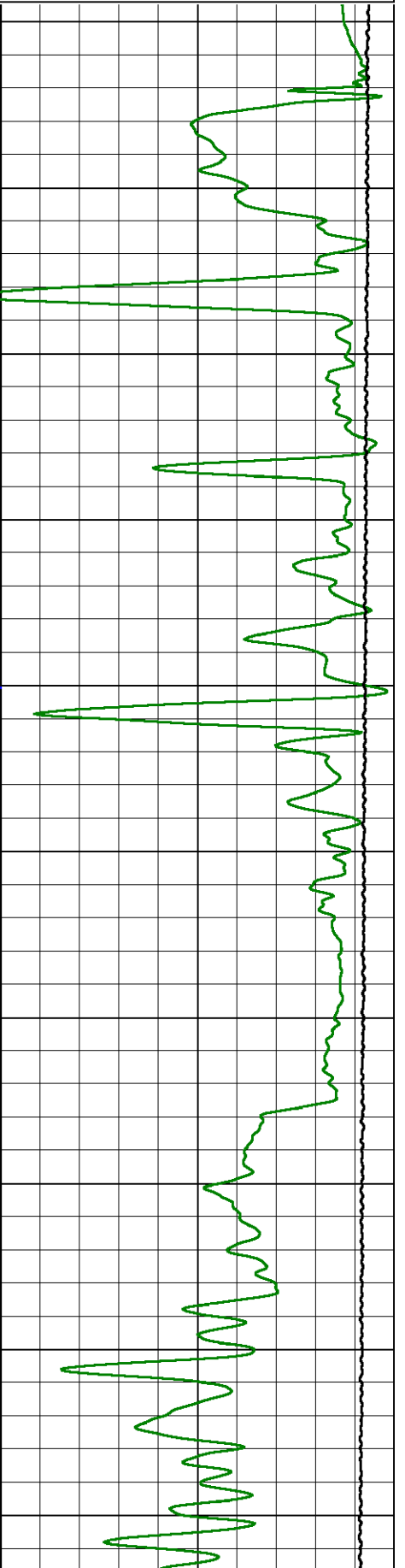
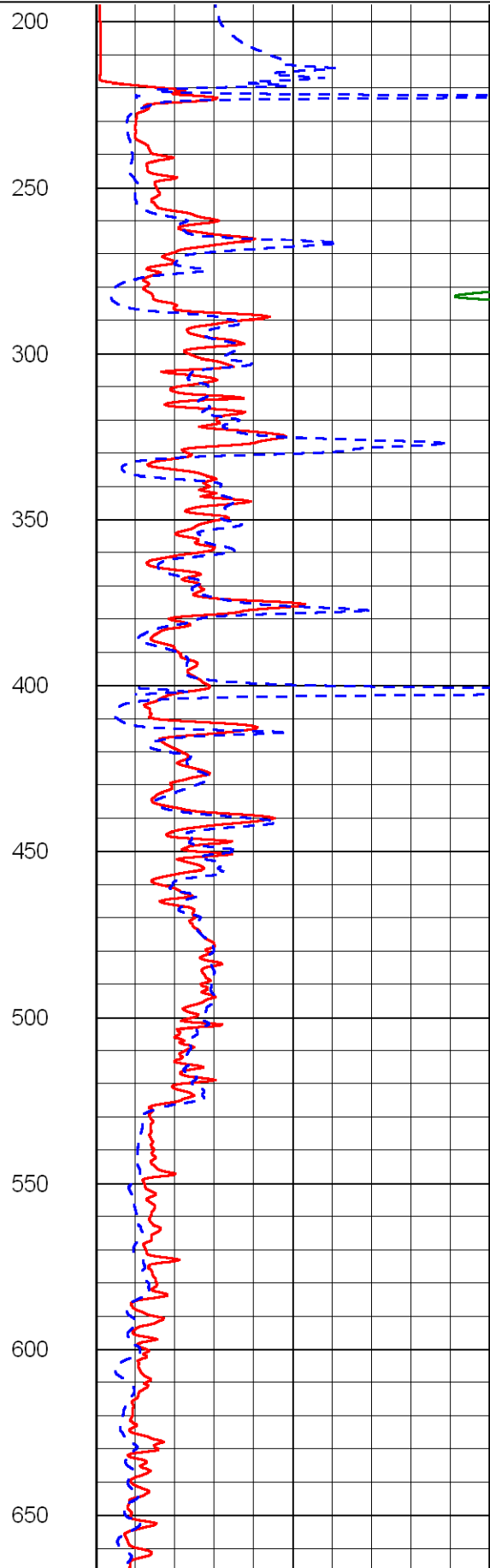
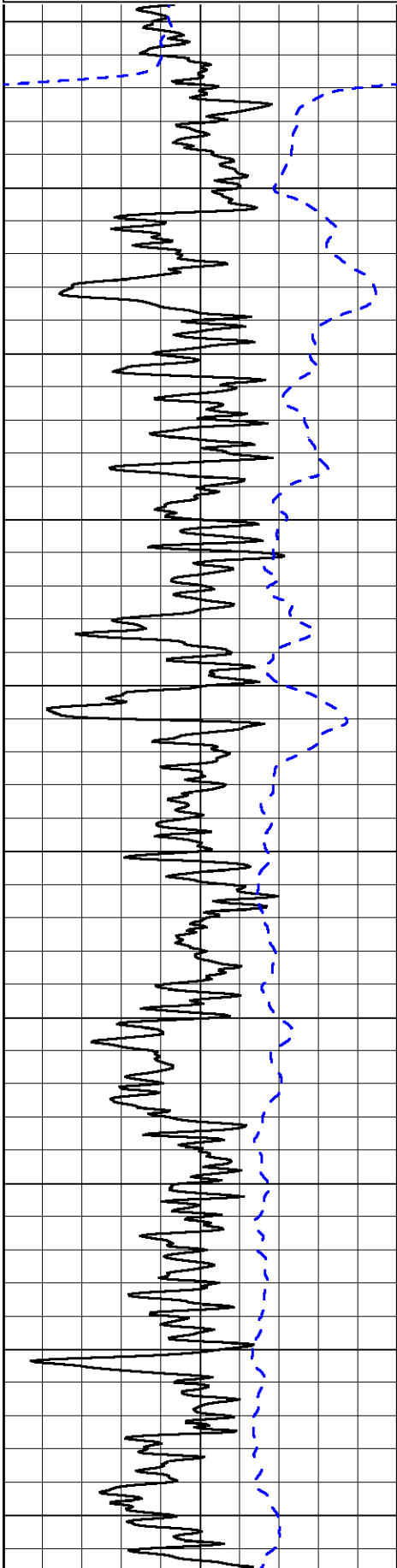
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 Charted by: Depth in Feet scaled 1:600

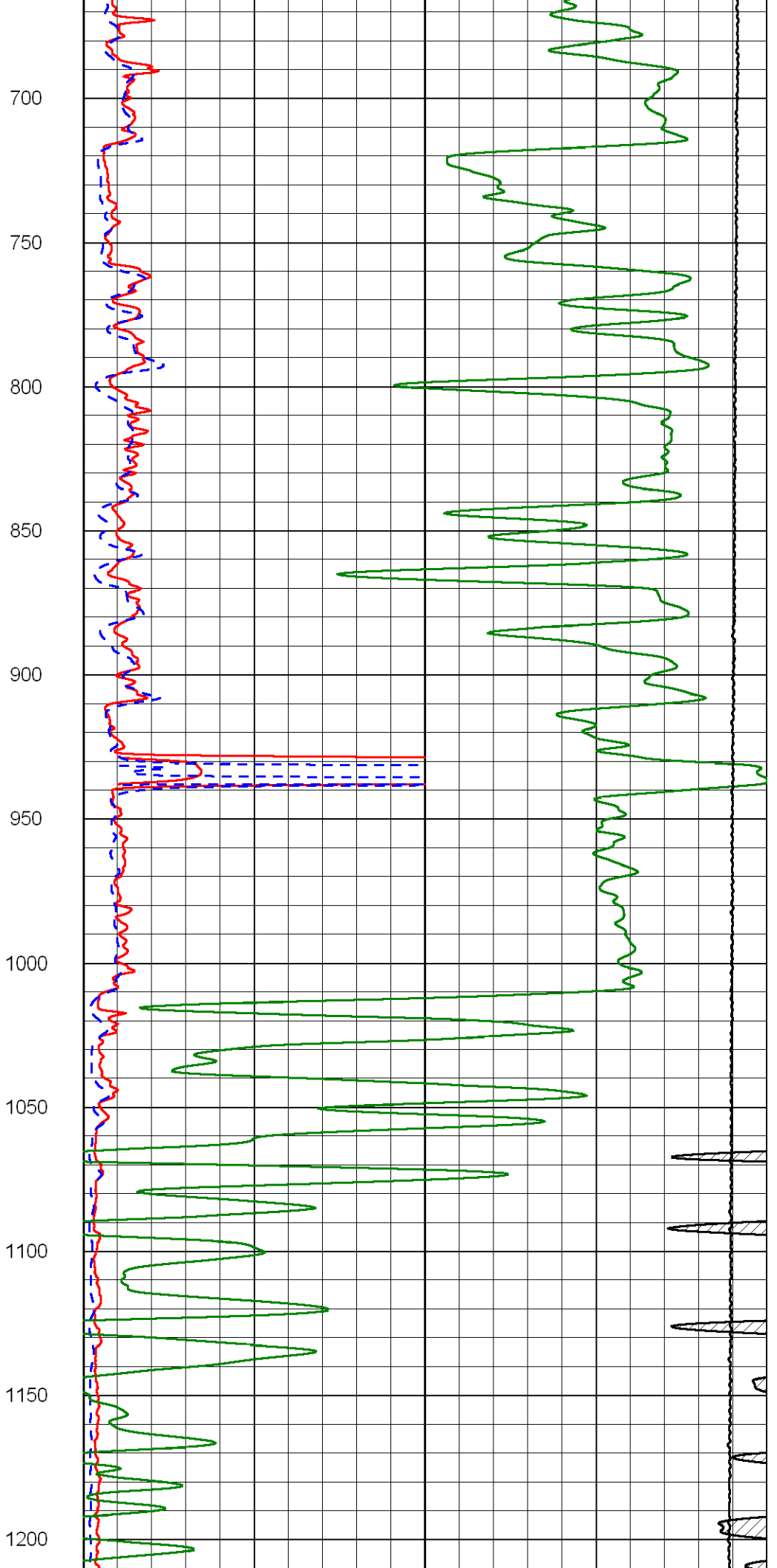
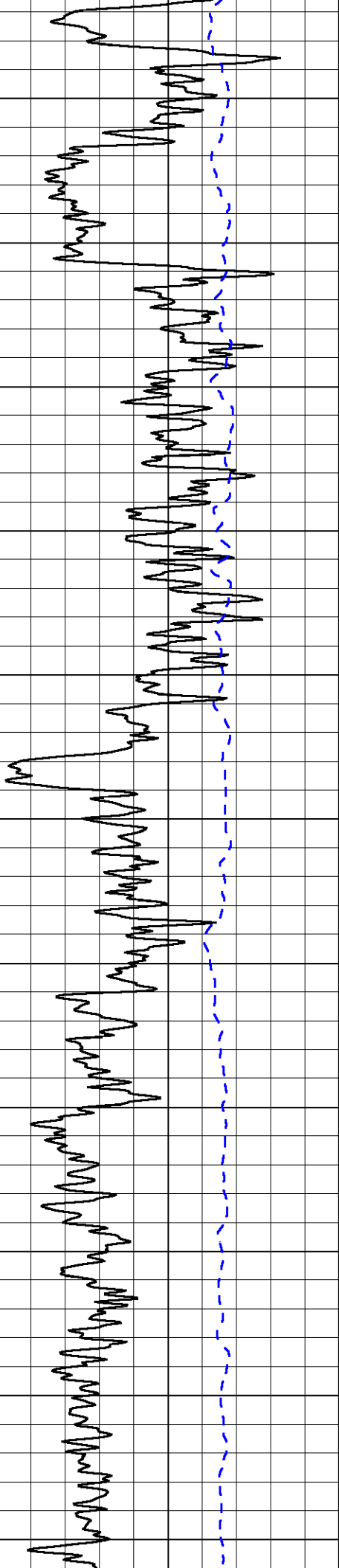
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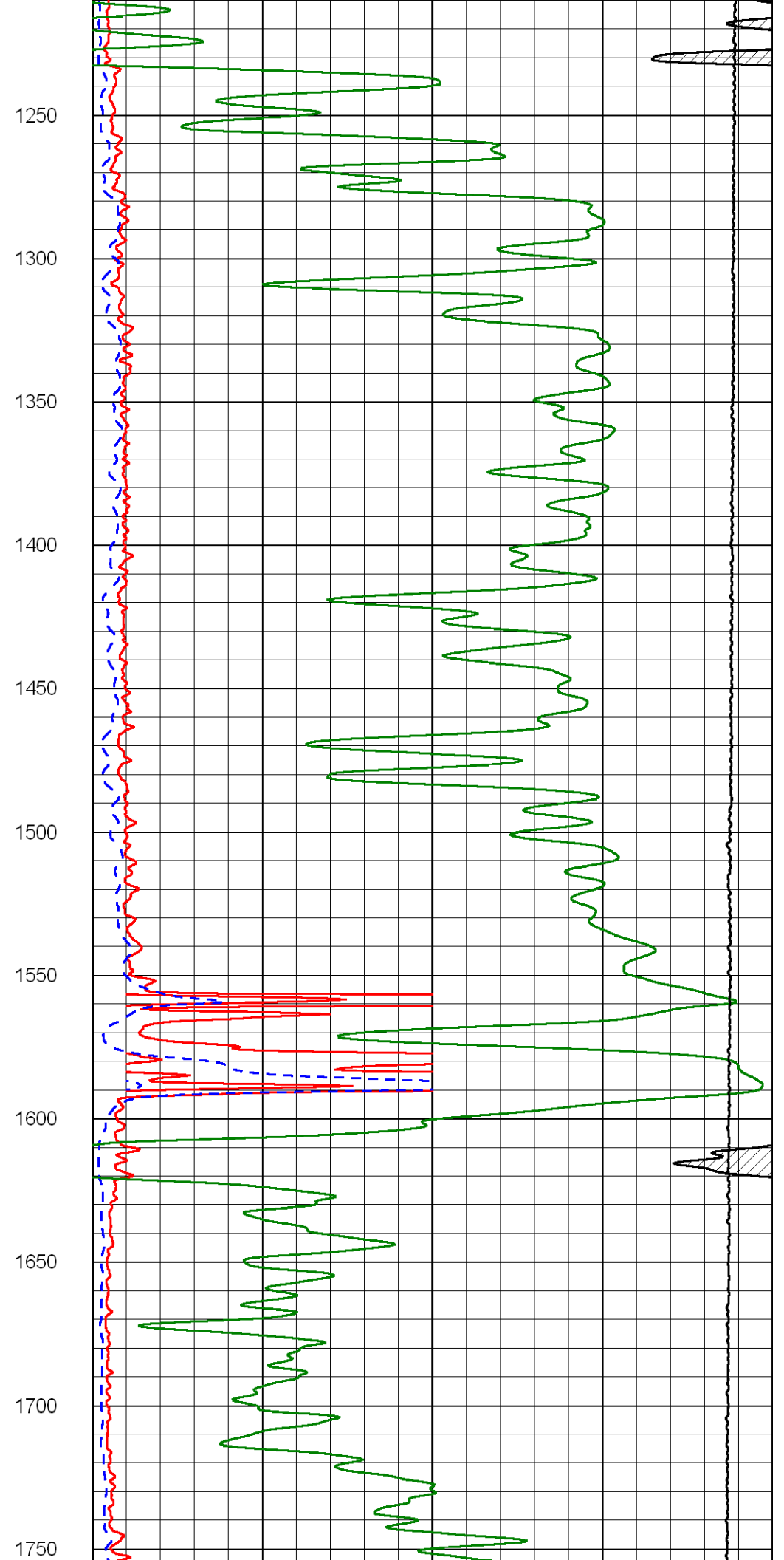
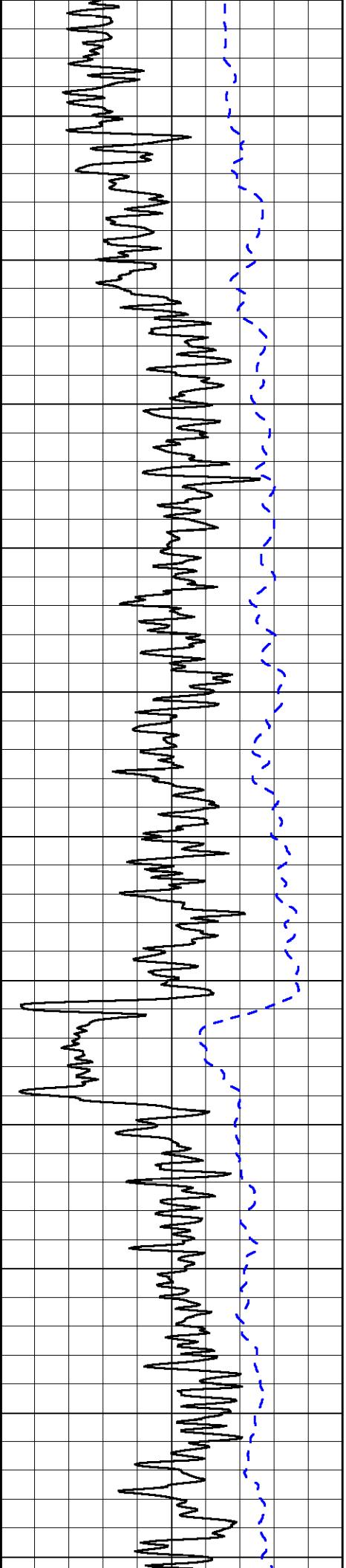
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0	Deep Resistivity	50

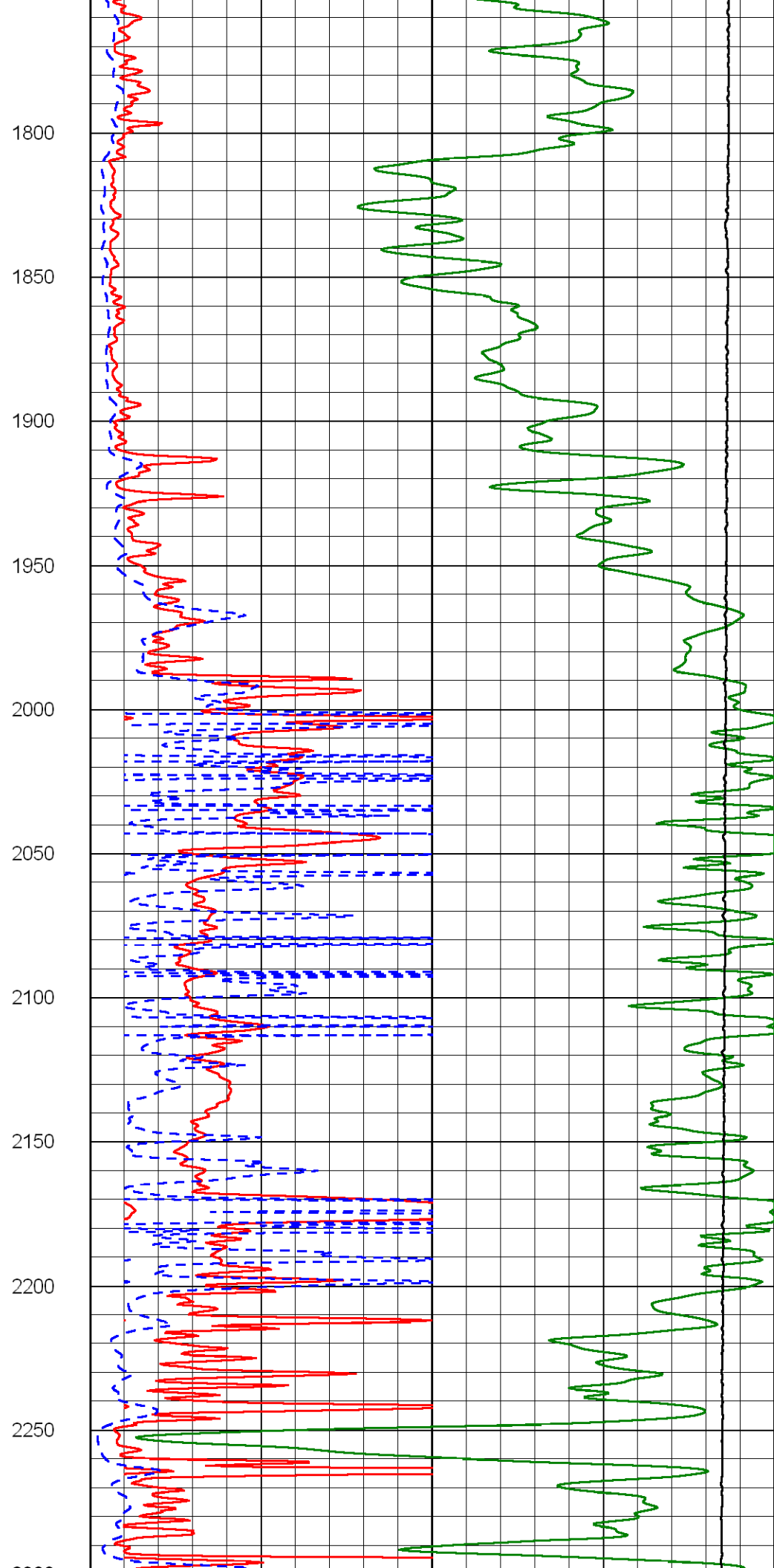
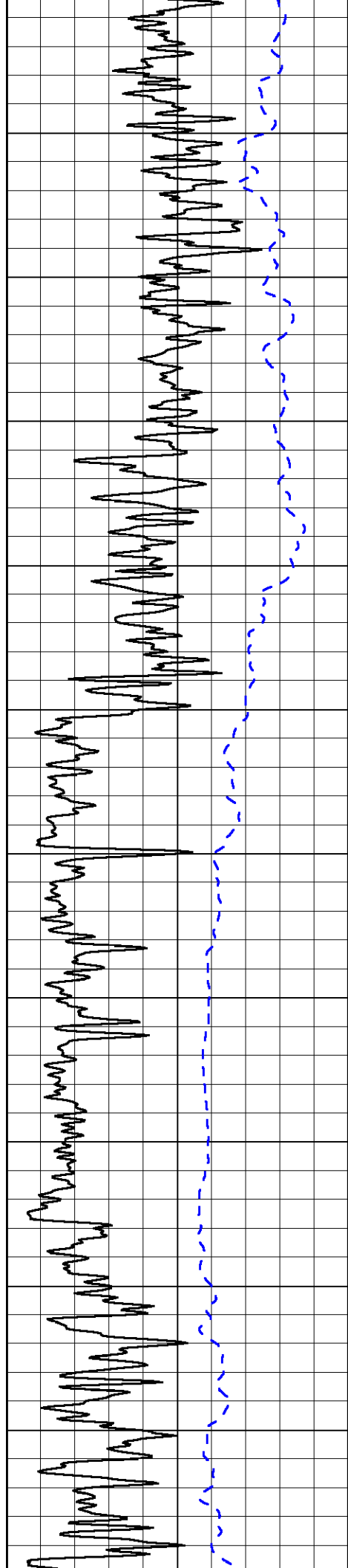
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15000	Line Tension	0

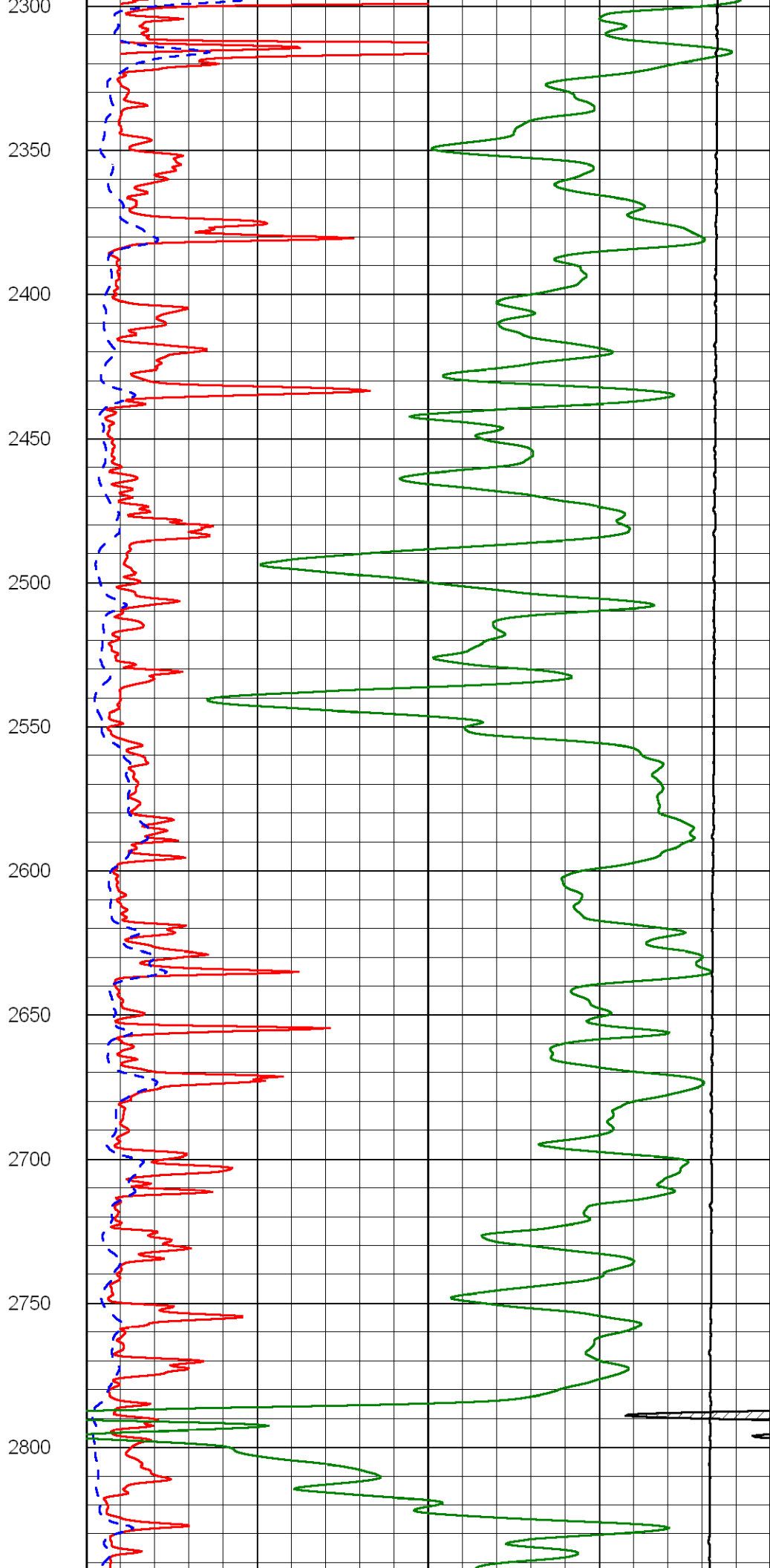
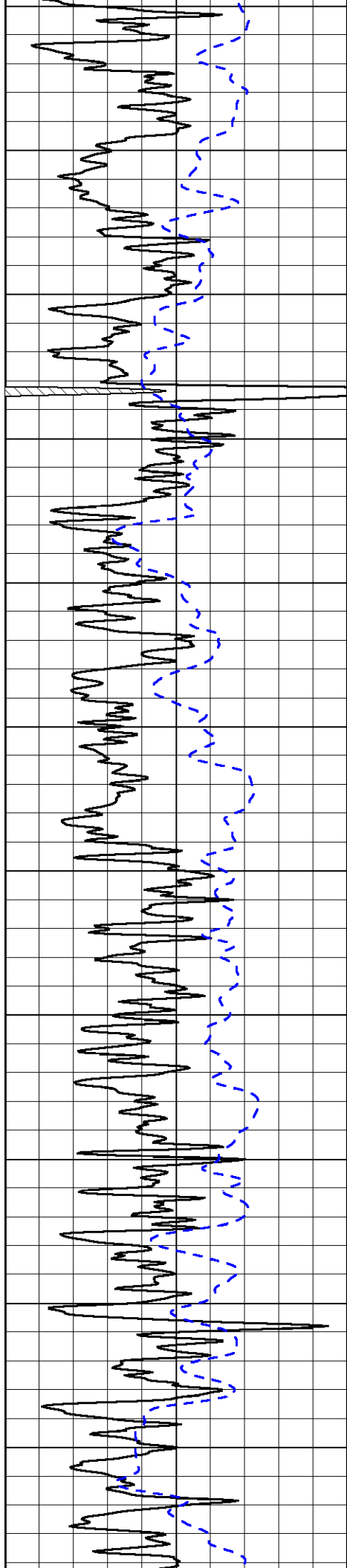
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50	Deep Resistivity	500

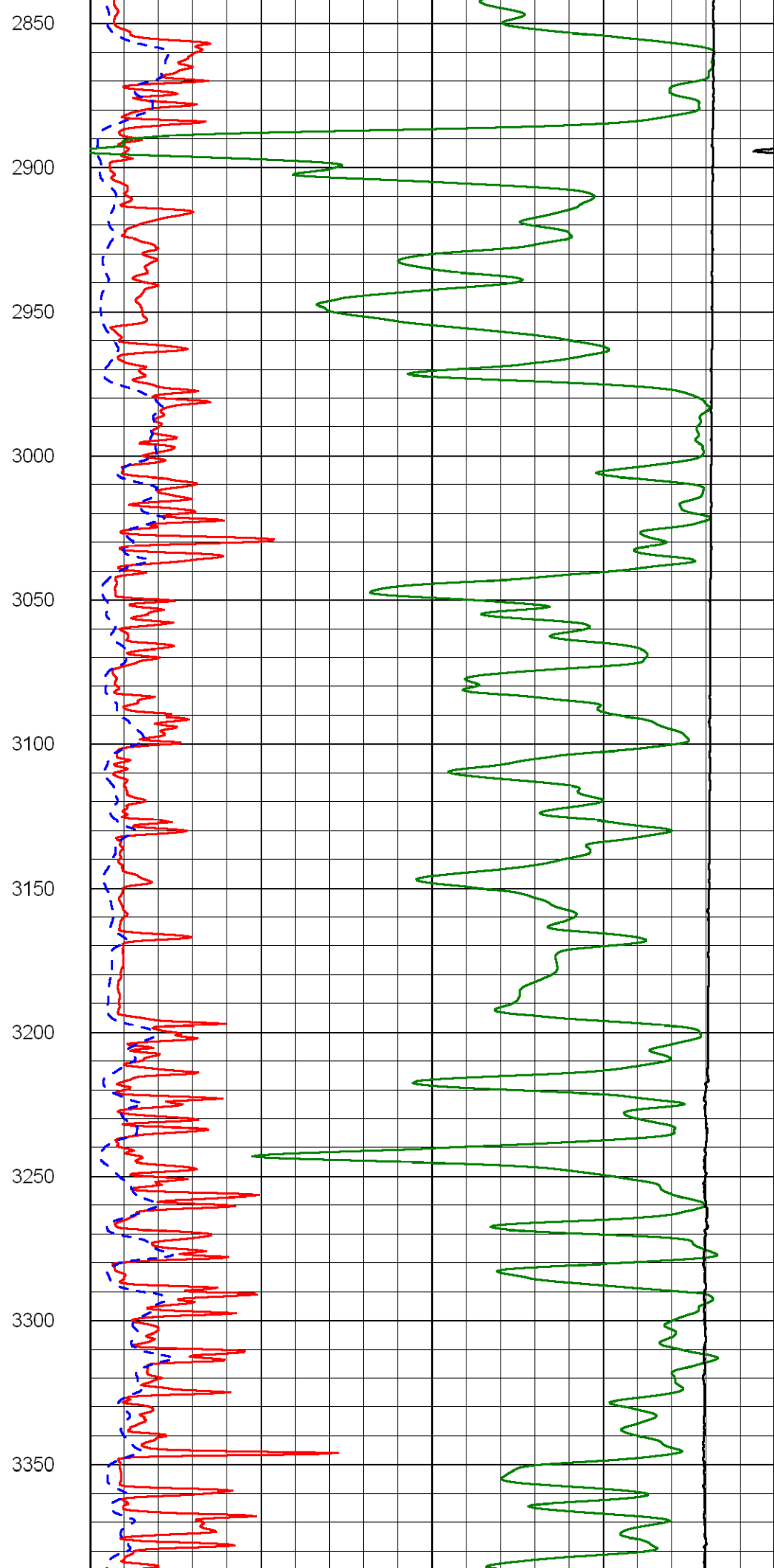
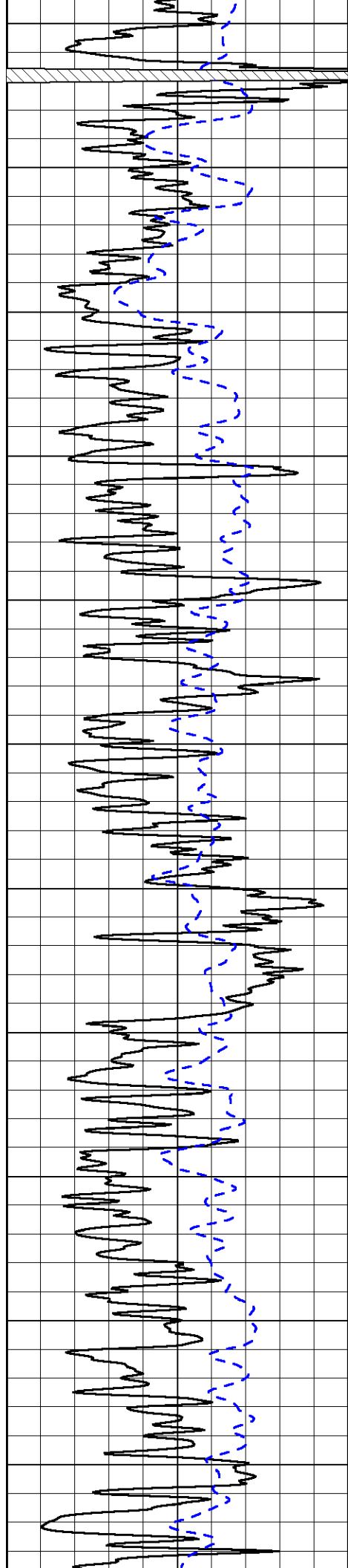


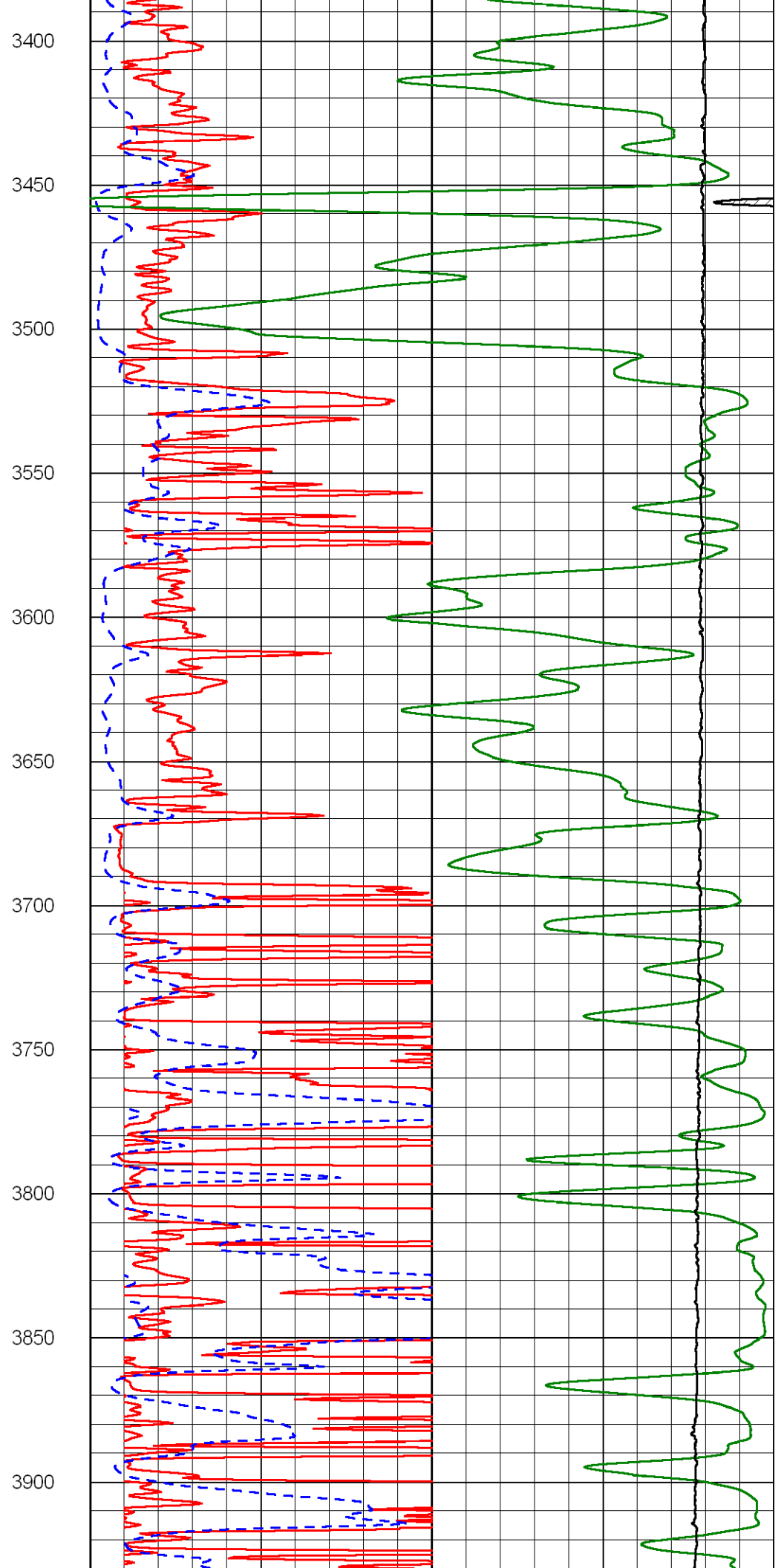
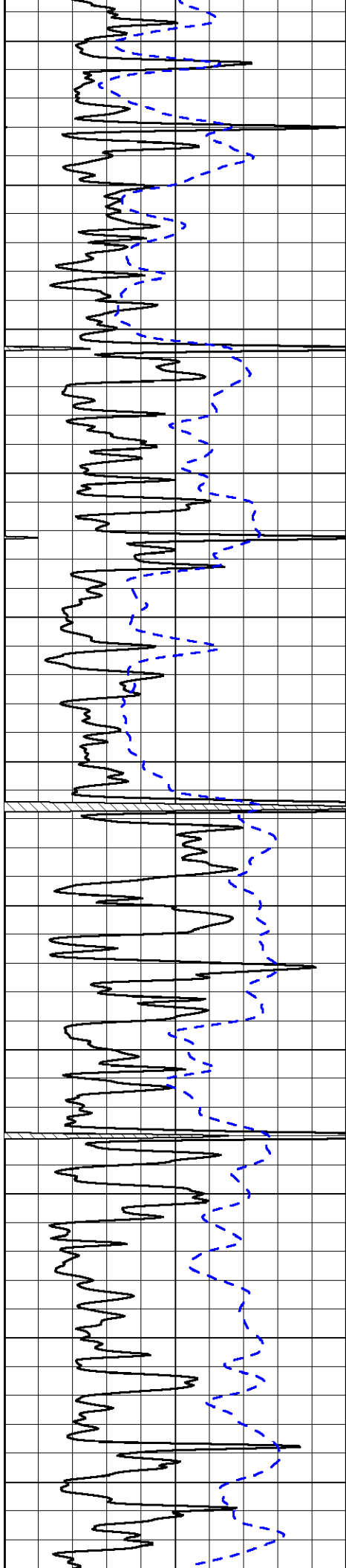


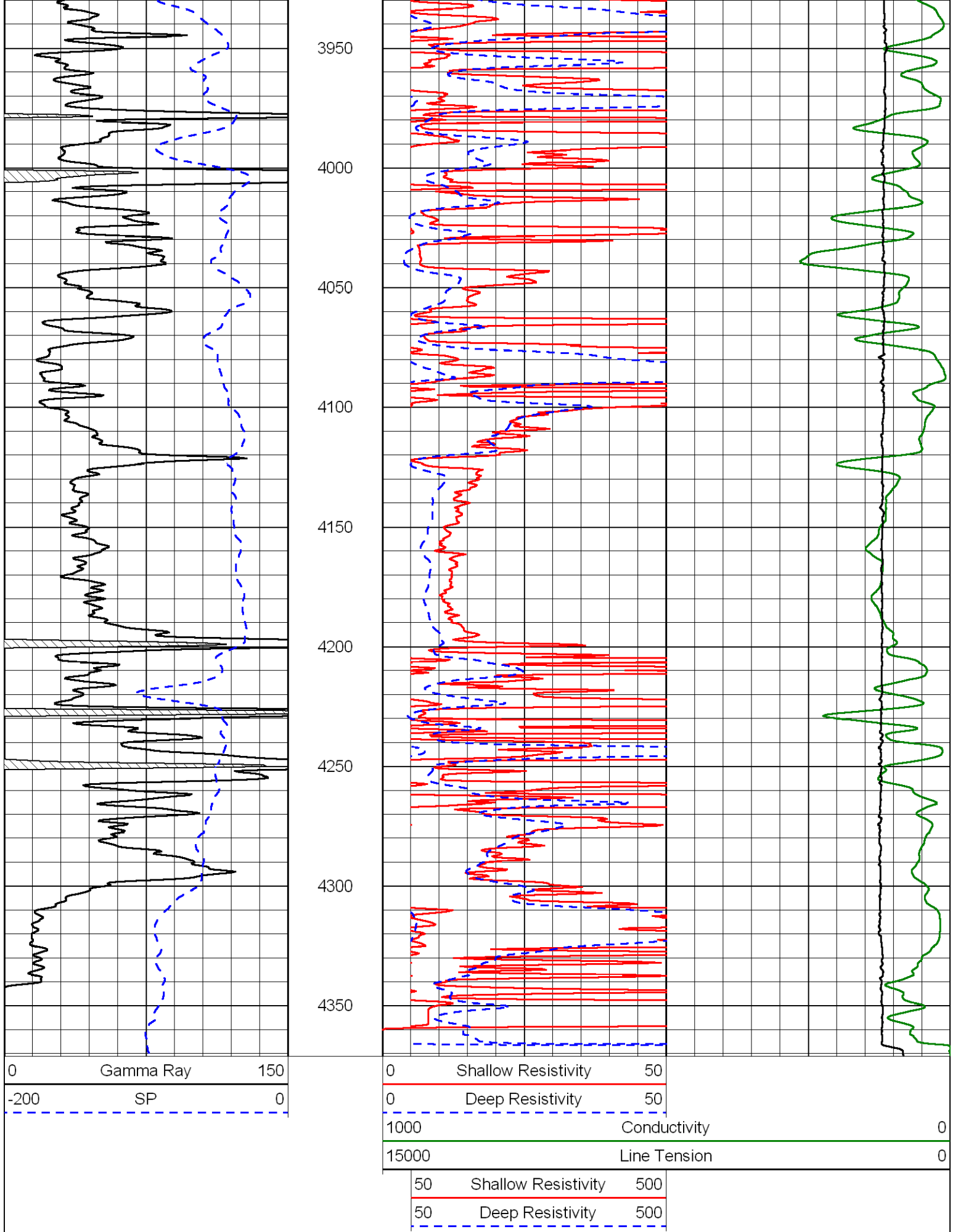










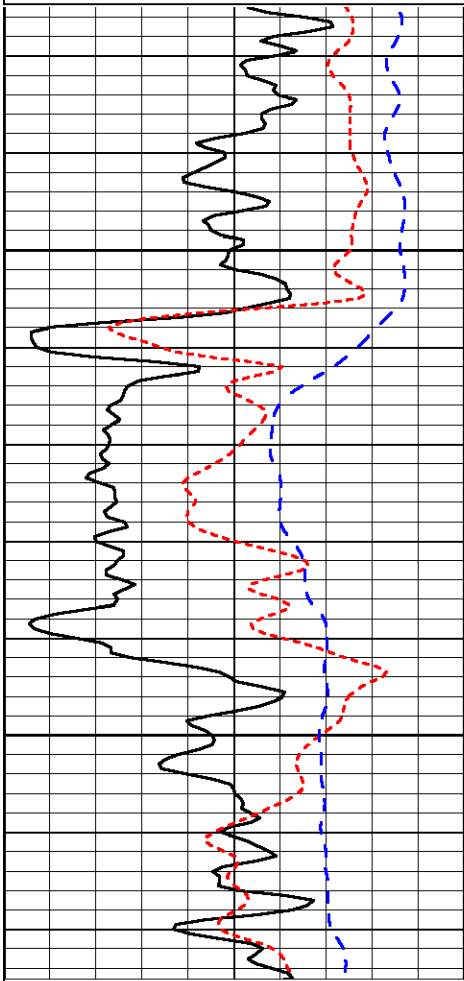


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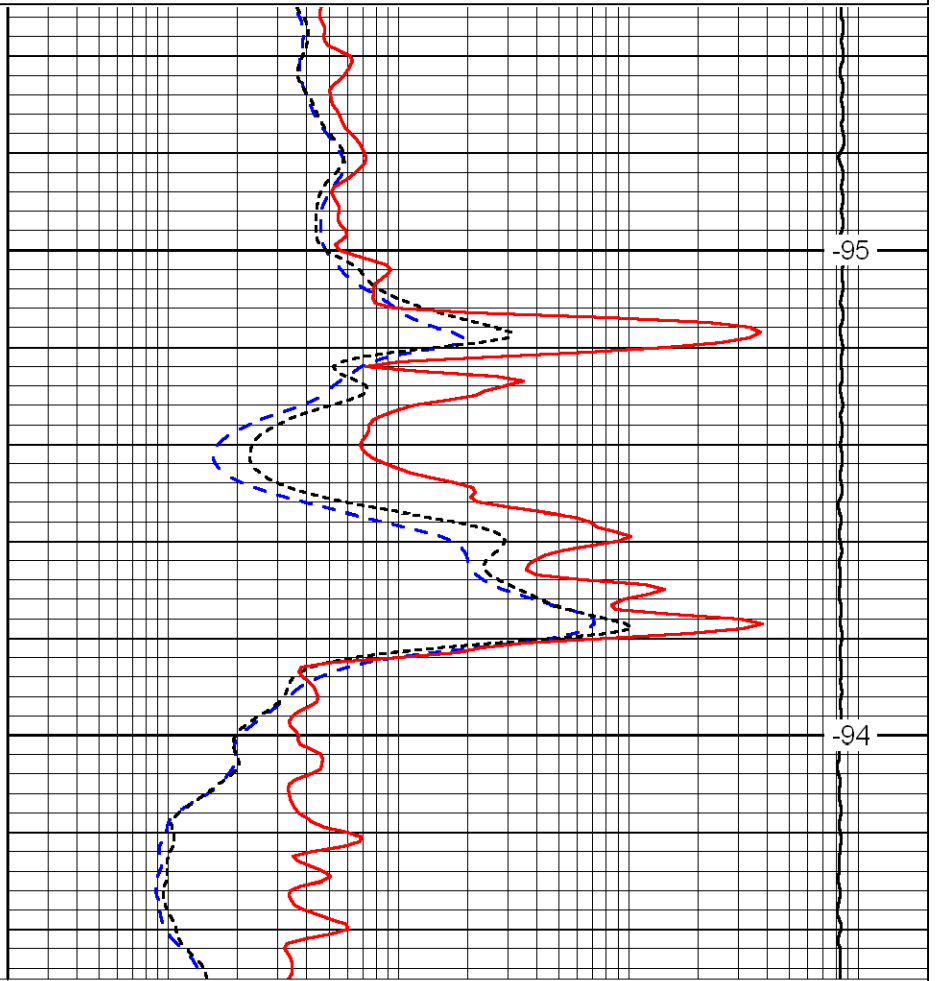
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0.2	Medium Resistivity	2000
0.2	Shallow Resistivity	2000
10000	Line Tension	0

LSPD



1550

1600



-95

-94

0	Gamma Ray	150
-160	RXO/RT	40
-200	SP	0

0.2	Deep Resistivity	2000
0.2	Medium Resistivity	2000
0.2	Shallow Resistivity	2000
10000	Line Tension	0

LSPD

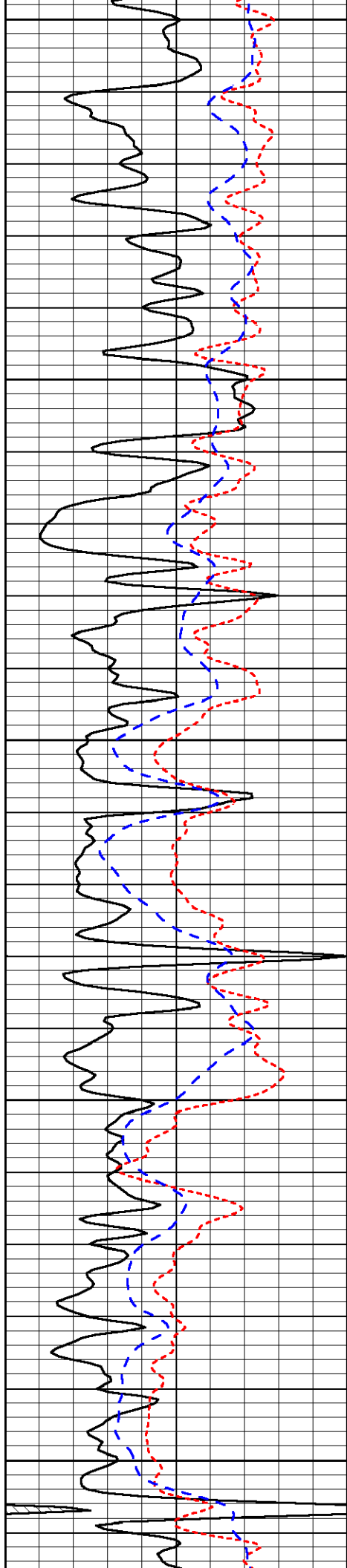
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0	Gamma Ray	150
-160	RXO/RT	40
-200	SP	0

0.2	Deep Resistivity	2000
0.2	Medium Resistivity	2000
0.2	Shallow Resistivity	2000
10000	Line Tension	0

LSPD





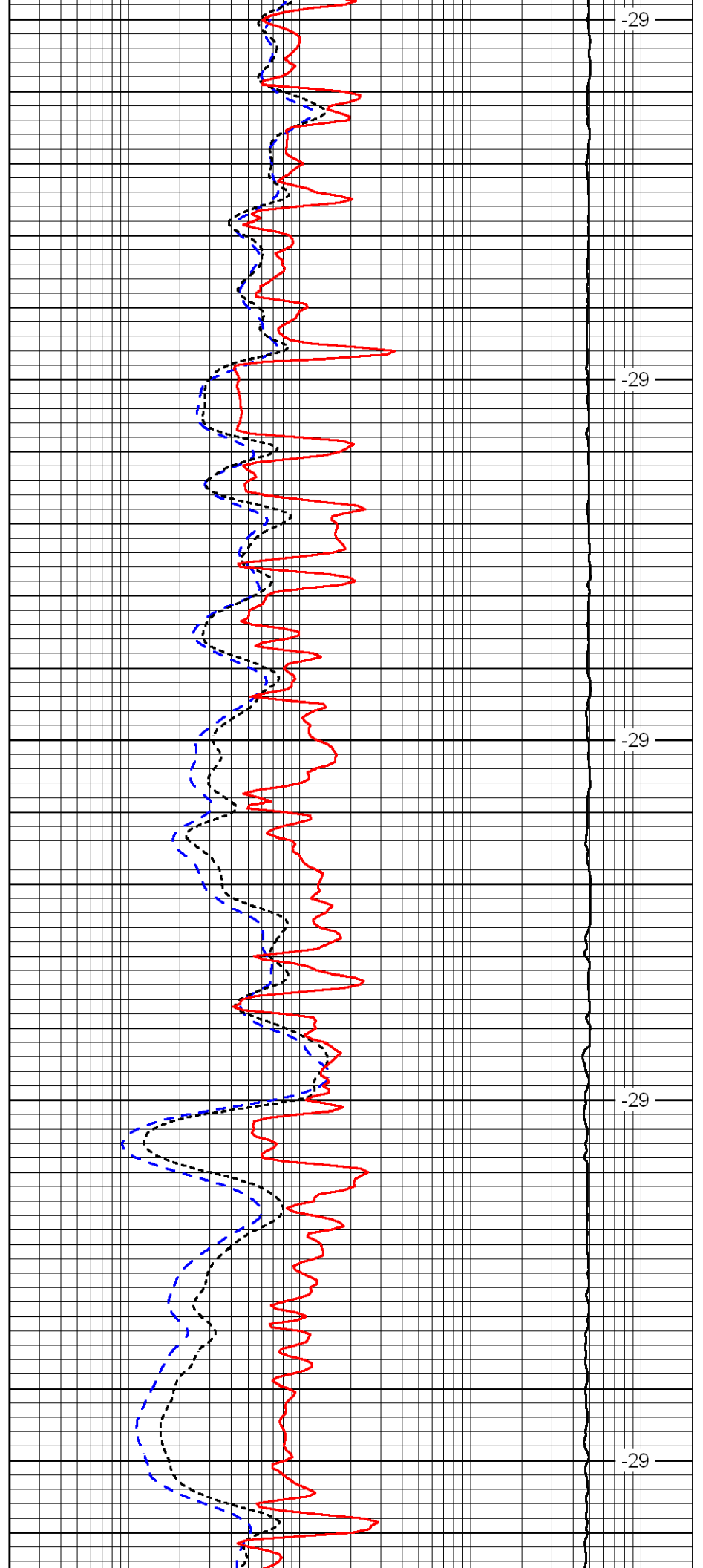
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3350

3400

3450

3500



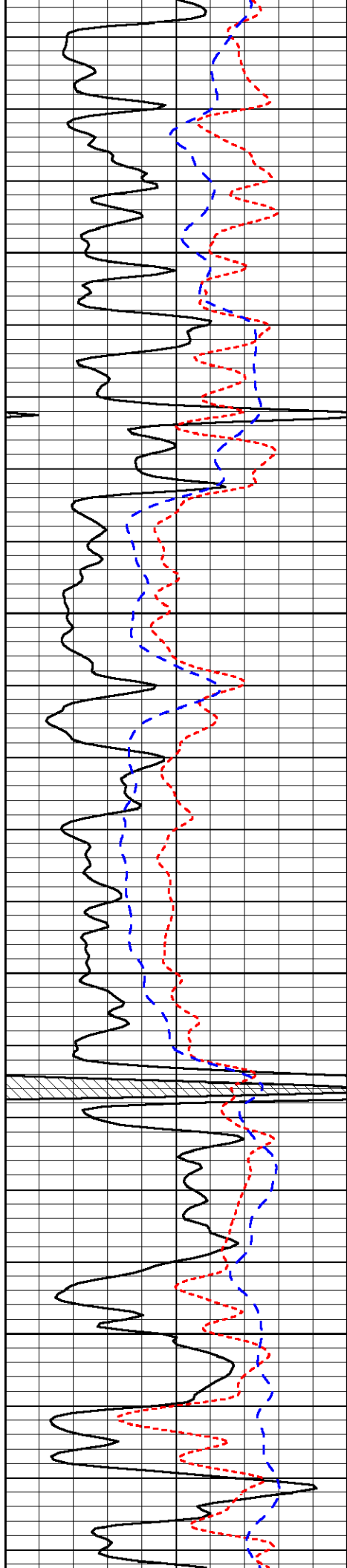
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-29

-29

-29

-29

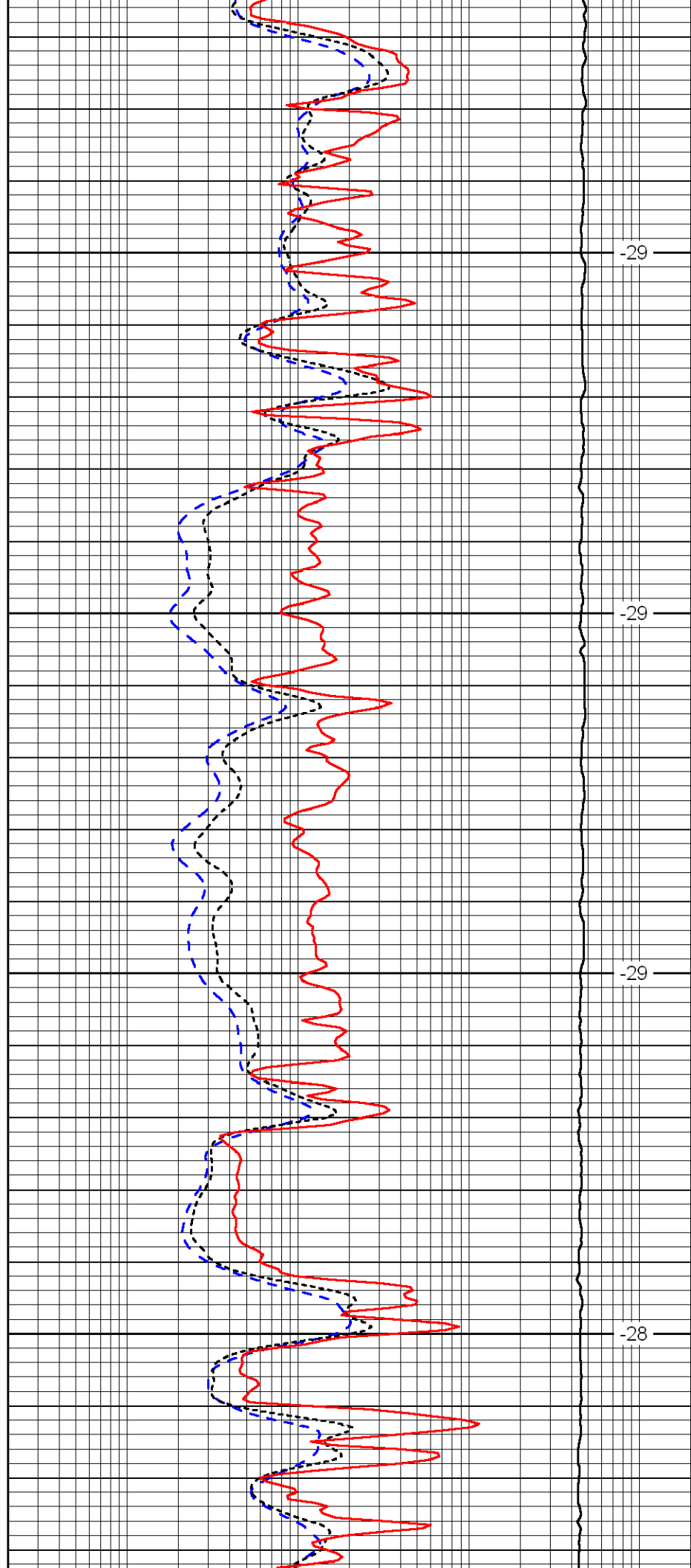


3550

3600

3650

3700

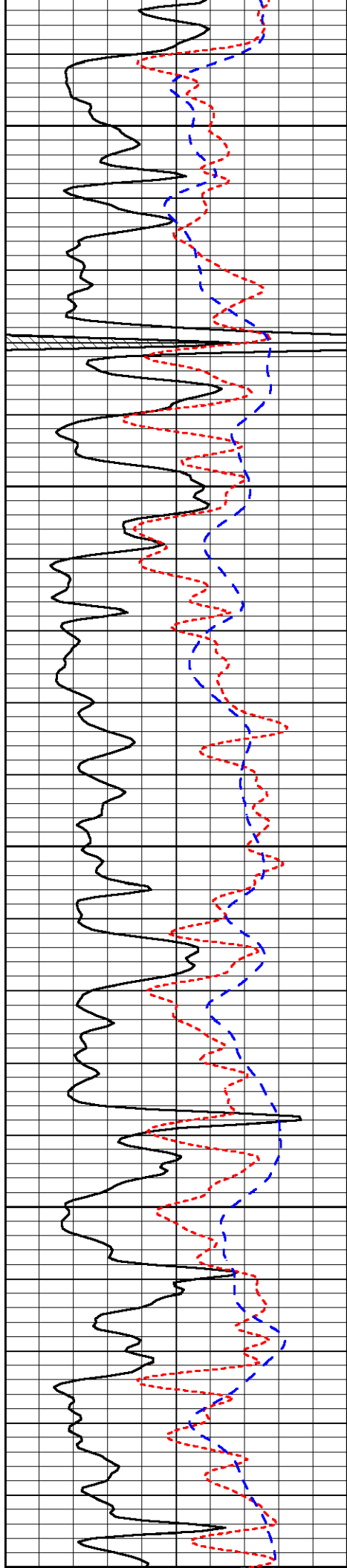


-29

-29

-29

-28



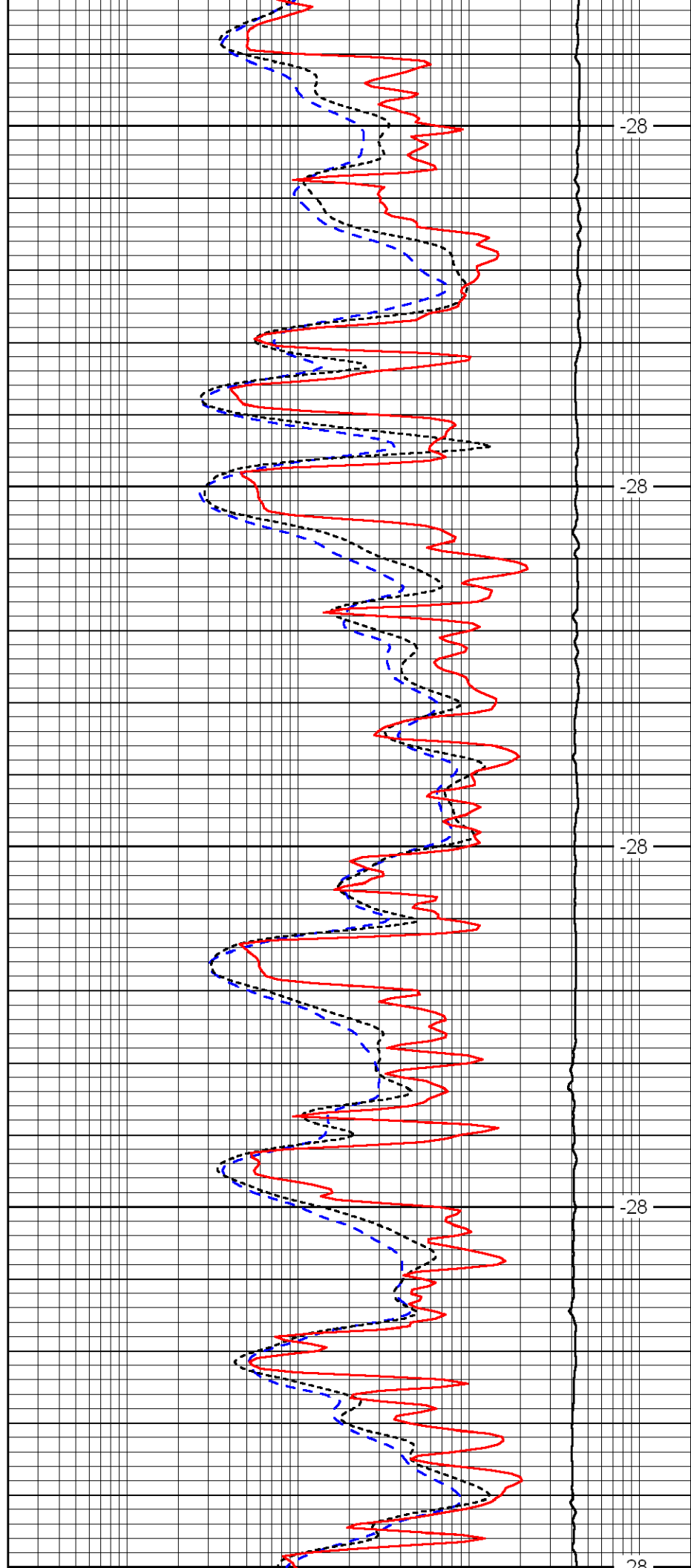
3750

3800

3850

3900

3950



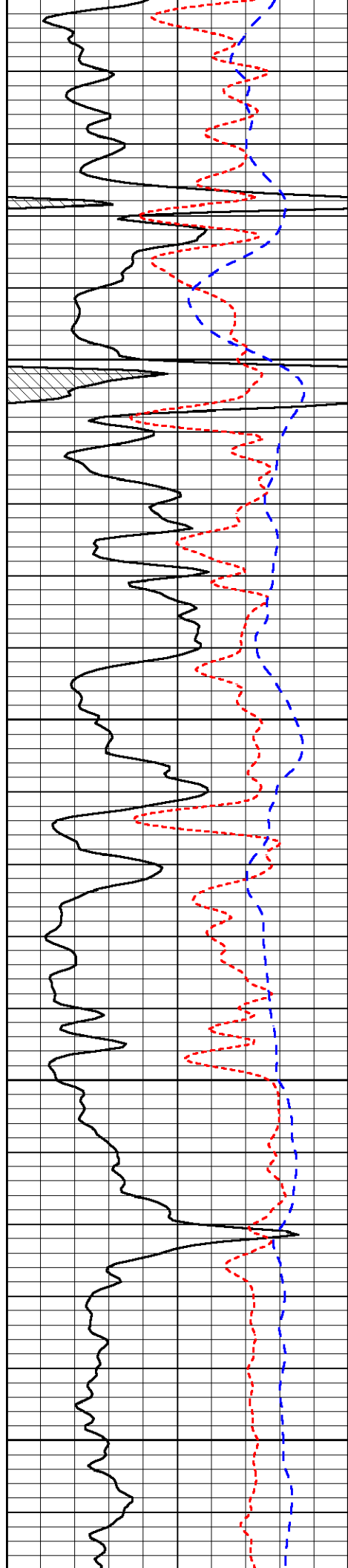
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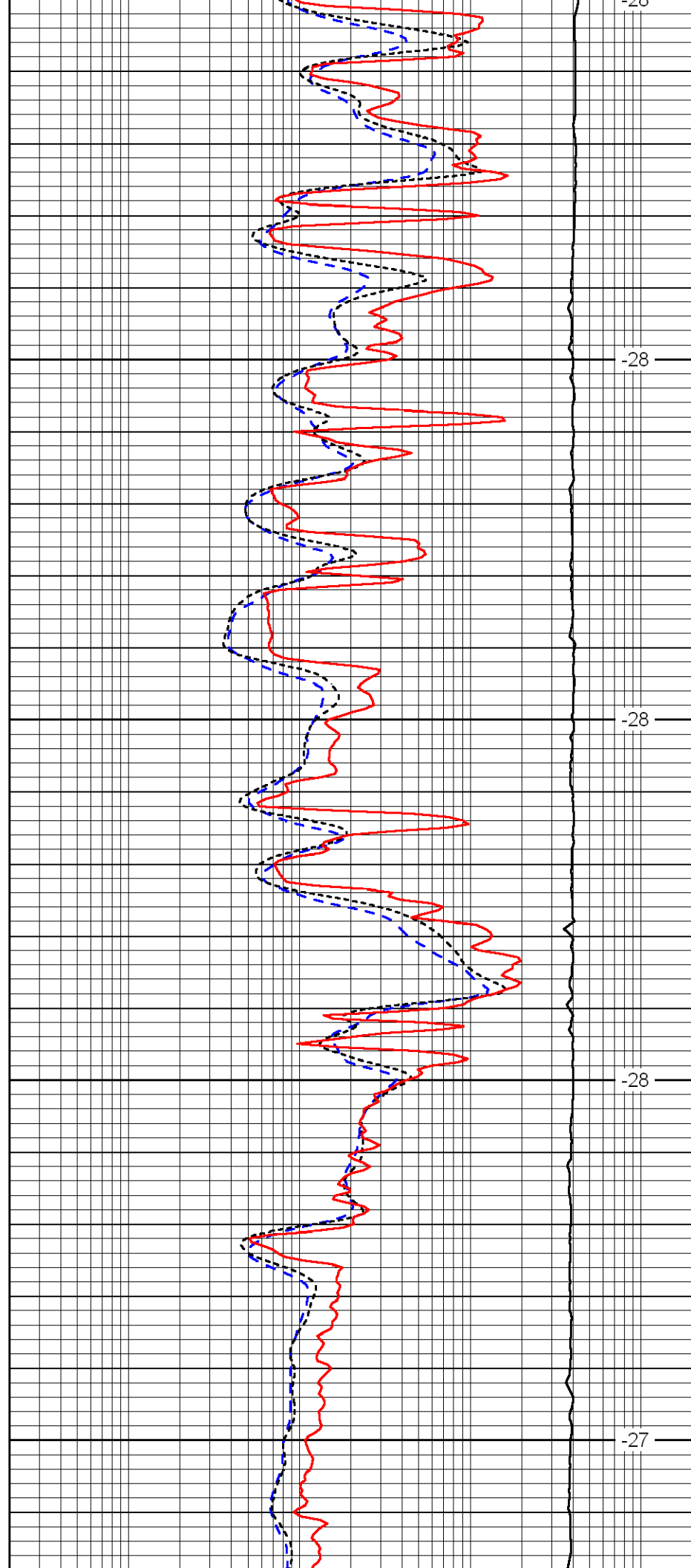
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4000

4050

4100

4150



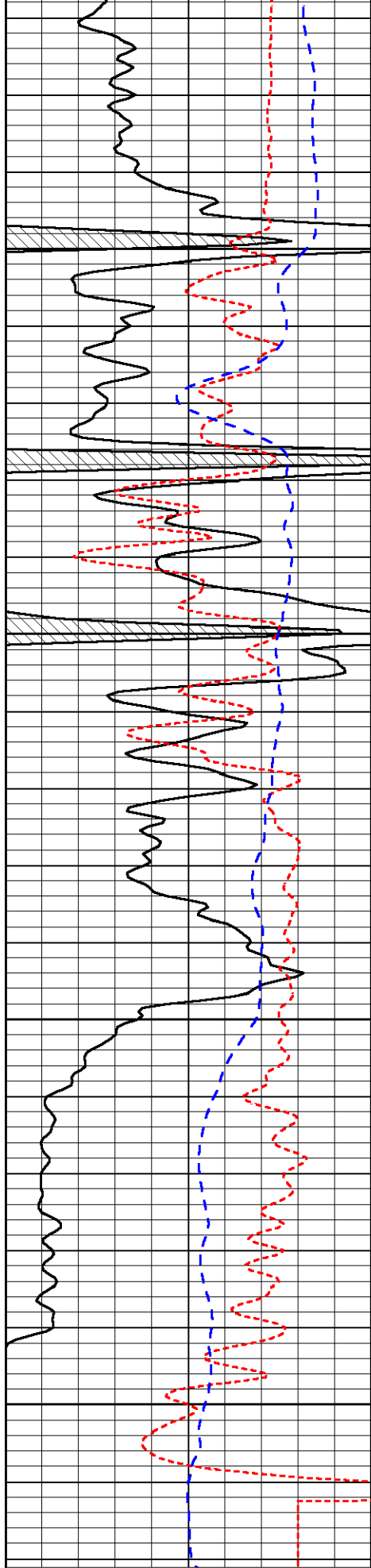
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-28

-28

-28

-27



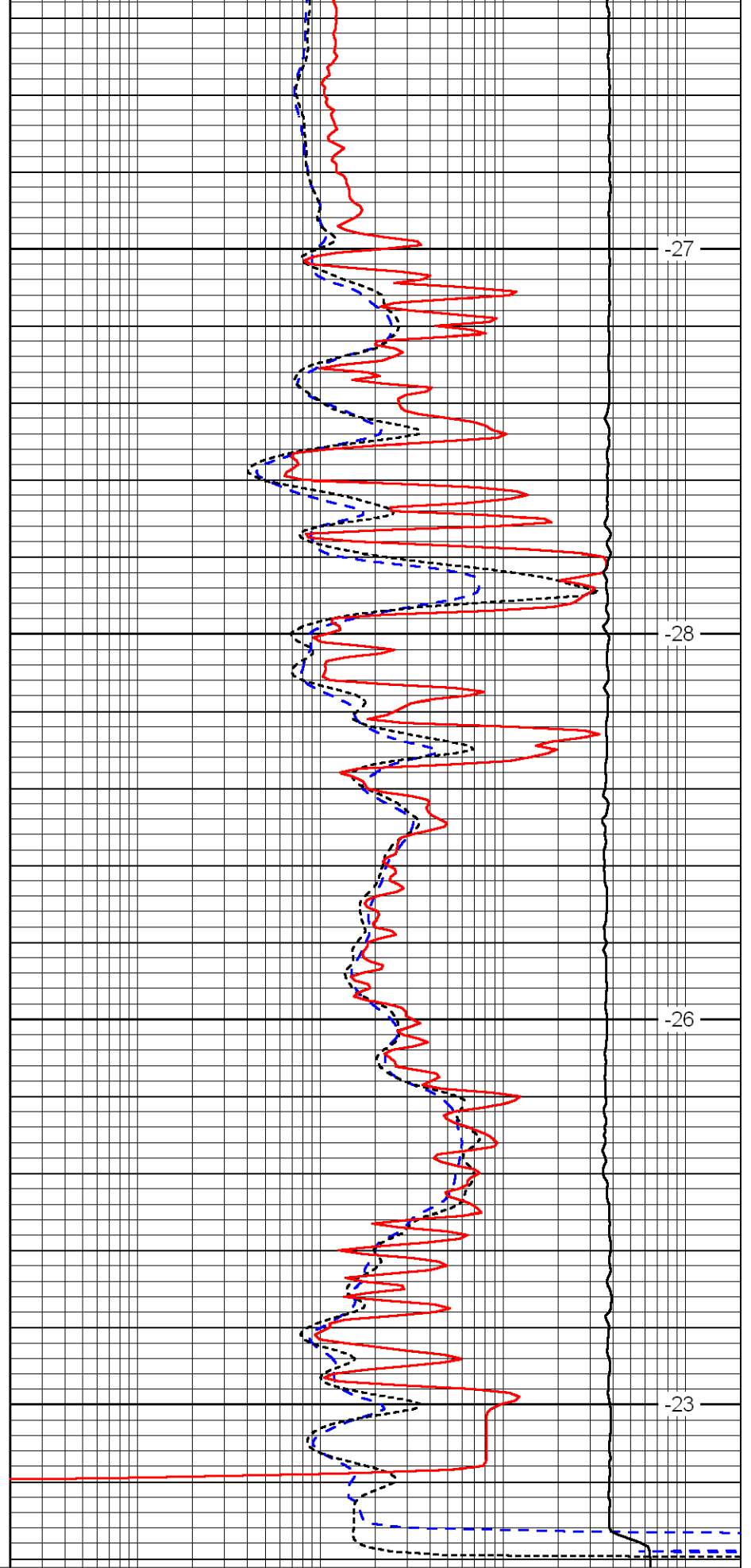
4200

4250

4300

4350

0	Gamma Ray	150
-160	RXO/RT	40
-200	SP	0



-27

-28

-26

-23

0.2	Deep Resistivity	2000
0.2	Medium Resistivity	2000
0.2	Shallow Resistivity	2000

10000

Line Tension

0

LSPD