PIONEER

Pioneer Energy Services

Dual Induction Log

Company	Murfin Drilling Company, Inc.
Well	Delay #1-21
Field	Wildcat
County	Cheyenne State Kansas
API No.	15-023-21408-00-00

Location: 1510' FSL & 330' FEL

Sec: 21 Twp: 1S Rge: 38W

Permanent Datum: Ground Level — Elevation 3194

Log Measured From: Kelly Bushing — 5 Ft. Above Perm. Datum

Drilling Measured From: Kelly Bushing

Other Services: CNL/CDL, MEL/BHCS

Elevation: K.B. 3199, D.F., G.L. 3194

Date	9/3/2014			
Run Number	One			
Depth Driller	4750			
Depth Logger	4753			
Bottom Logged Interval	4752			
Top Log Interval	0			
Casing Driller	8.625 @ 218			
Casing Logger	217			
Bit Size	7.875			
Type Fluid in Hole	Chemical			
Salinity,ppm CL	600			
Density / Viscosity	9.2 / 72			
pH / Fluid Loss	11.5 / 6.8			
Source of Sample	Flowline			
Rm @ Meas. Temp	0.50 @ 72			
Rmf @ Meas. Temp	0.38 @ 72			
Rmc @ Meas. Temp	0.68 @ 72			
Source of Rmf / Rmc	Charts			
Rm @ BHT	0.29 @ 126			
Operating Rig Time	5 Hours			
Max Rec. Temp. F	126			
Equipment Number	91			
Location	Hays			
Recorded By	D. Schmidt			
Witnessed By	Rocky Milford			

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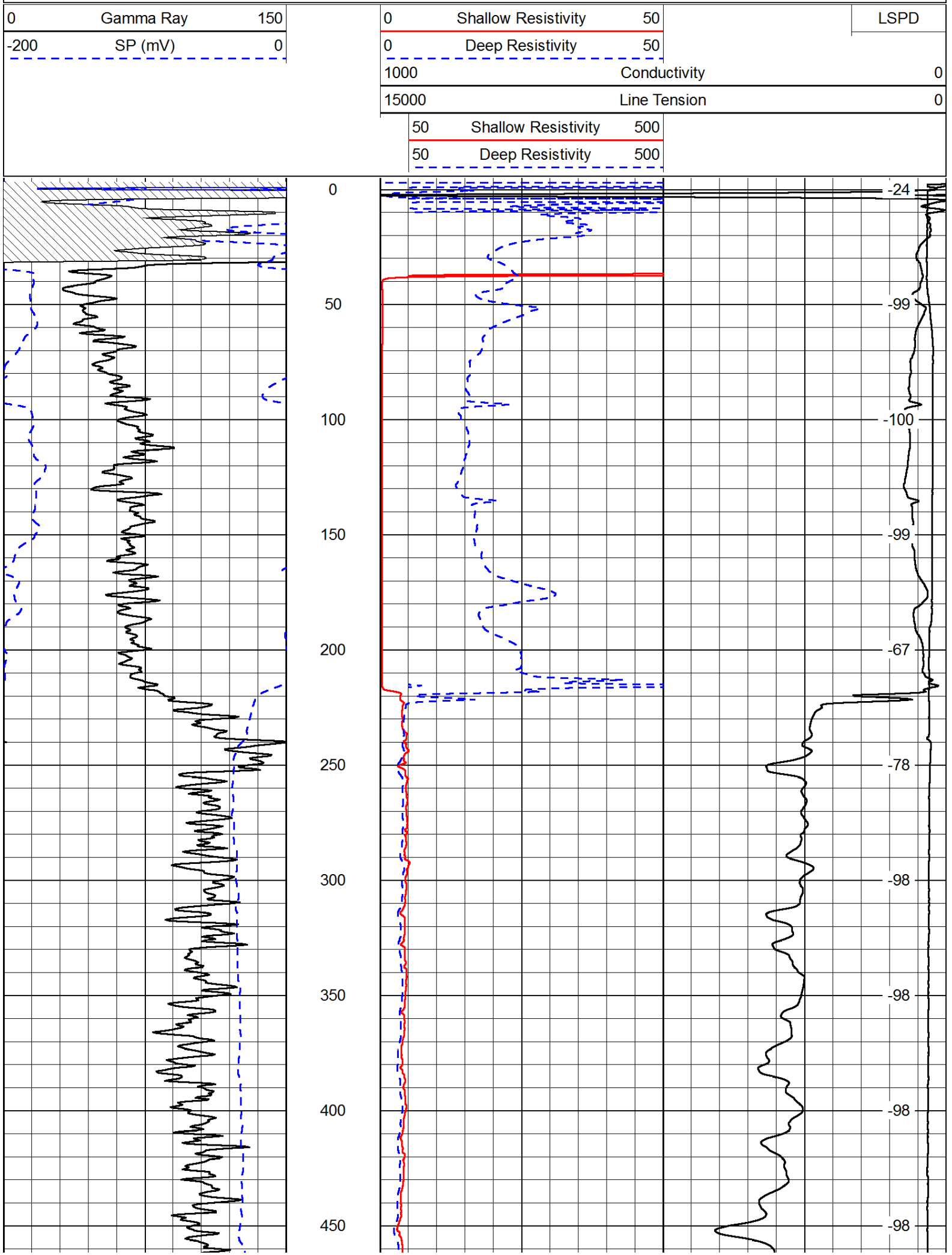
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

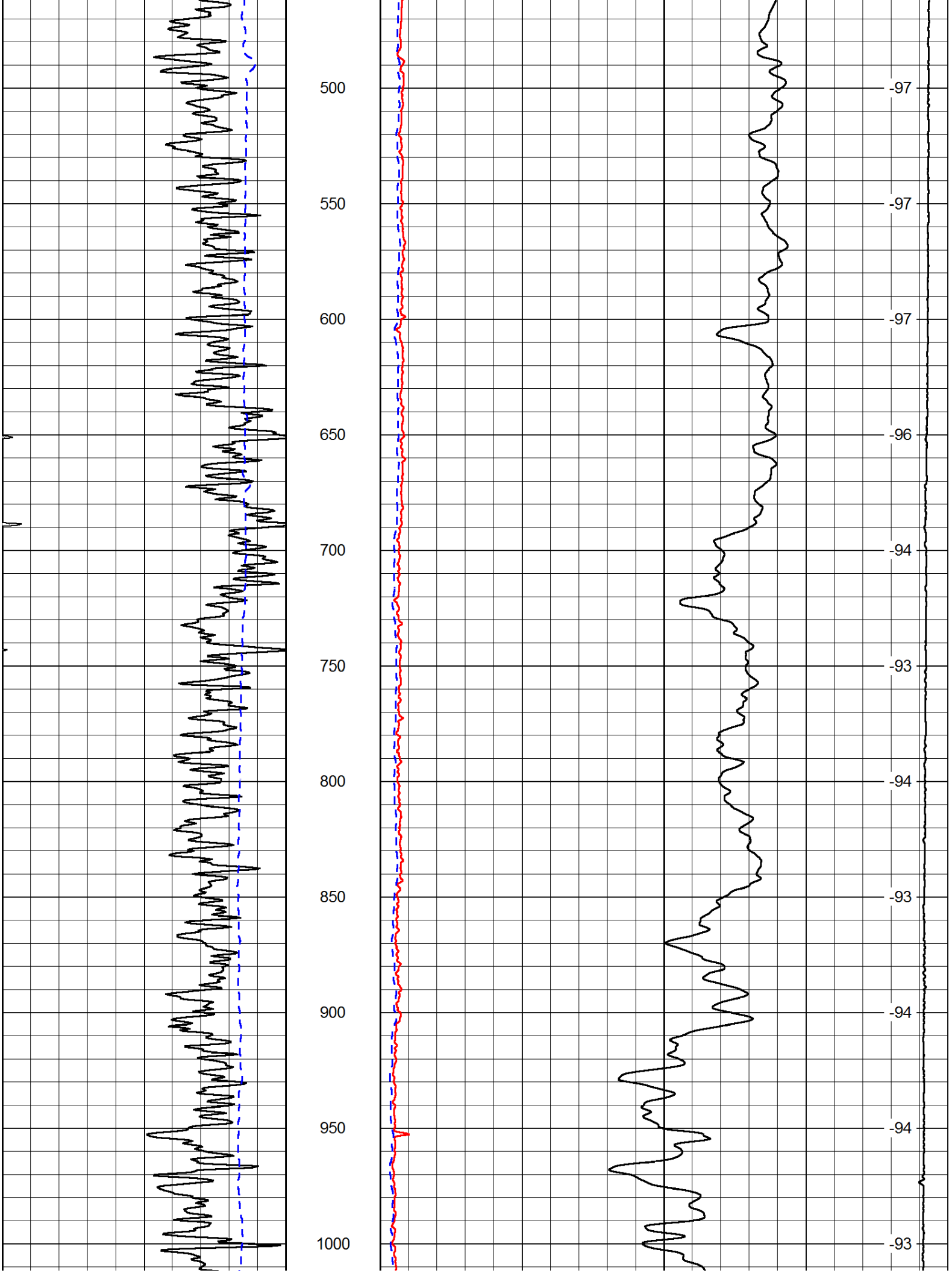
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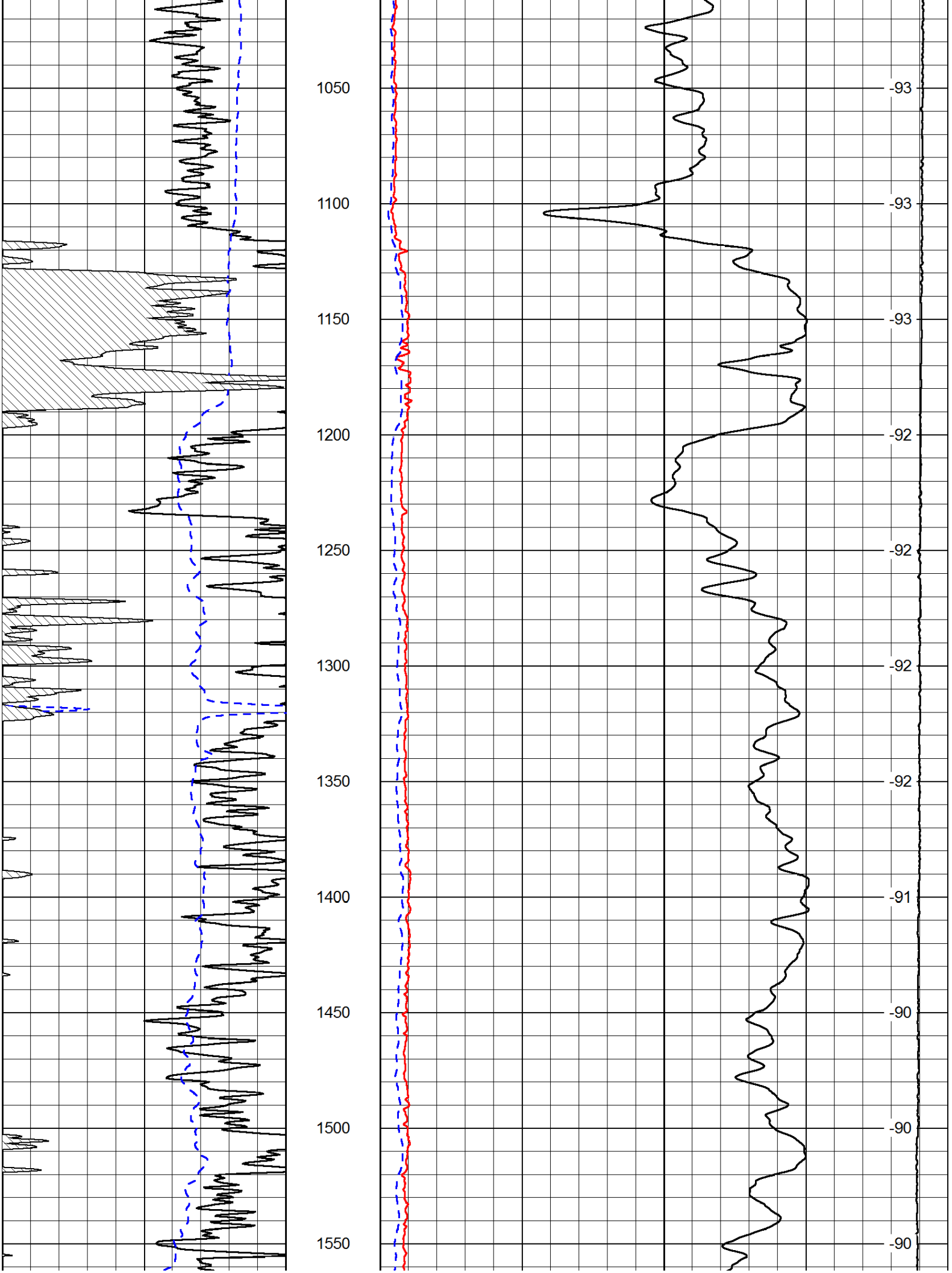
Thank you for using Pioneer Energy Services
www.pioneeres.com
785 625 3858

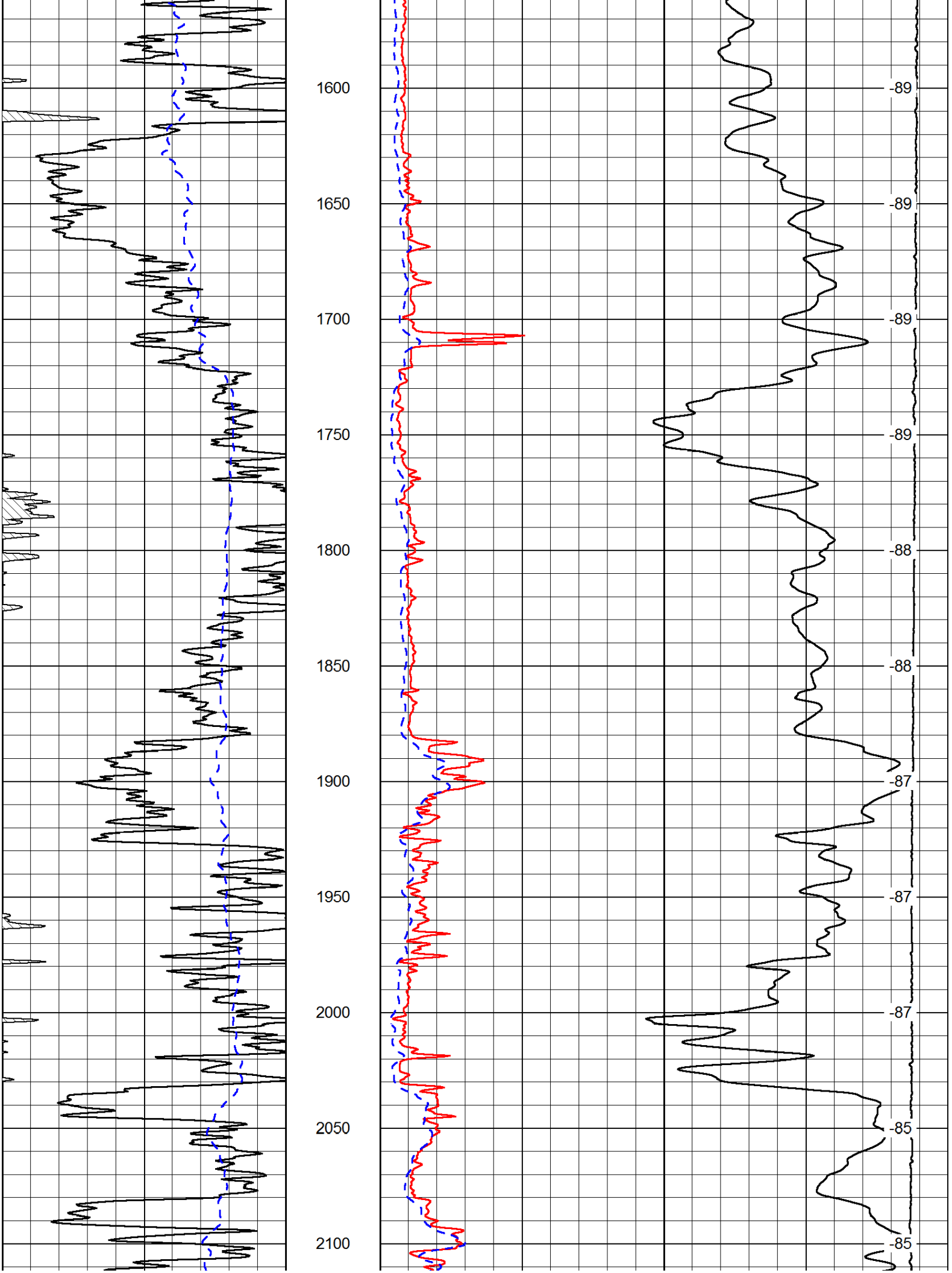
Bird City,
North on Hwy 161 to BB Rd, 2 West to 26 Rd,
1/2 South into

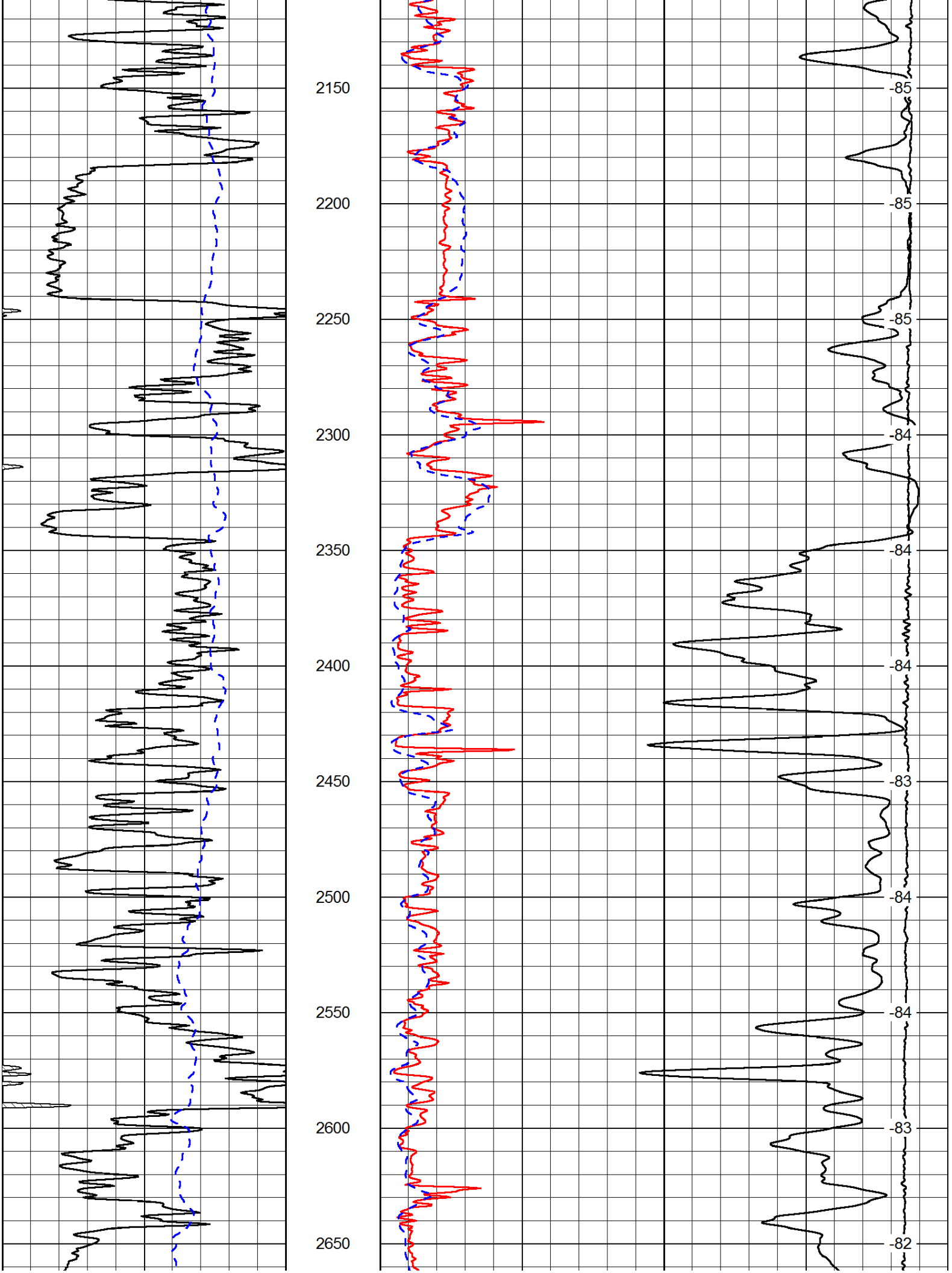
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Dataset Creation:	Wed Sep 03 08:28:39 2014
Charted by:	Depth in Feet scaled 1:600

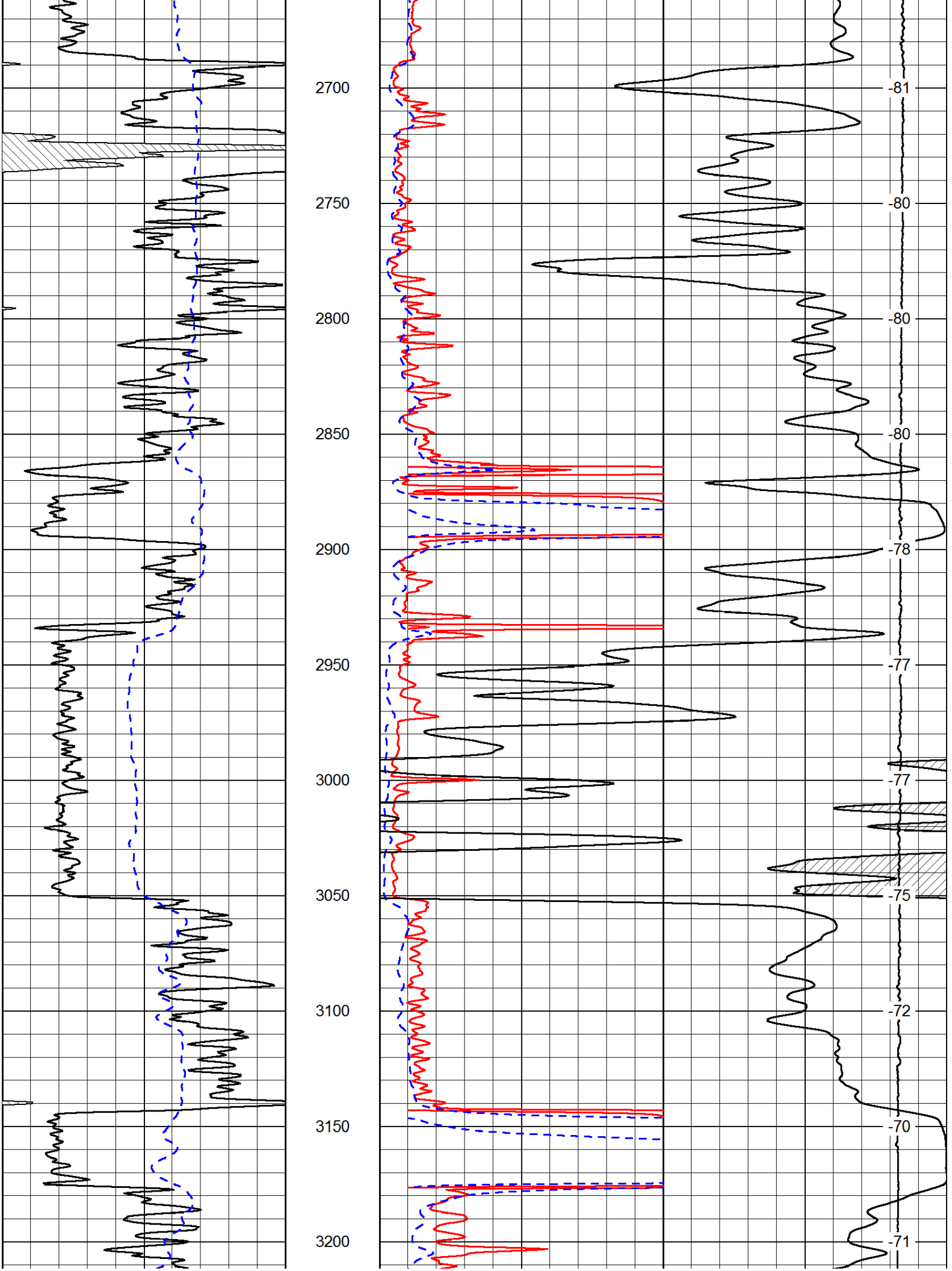

0 Gamma Ray 150
-200 SP (mV) 0
0 Shallow Resistivity 50
0 Deep Resistivity 50
1000 Conductivity 0
15000 Line Tension 0
50 Shallow Resistivity 500
50 Deep Resistivity 500
LSPD
0
50
100
150
200
250
300
350
400
450
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-99
-100
-99
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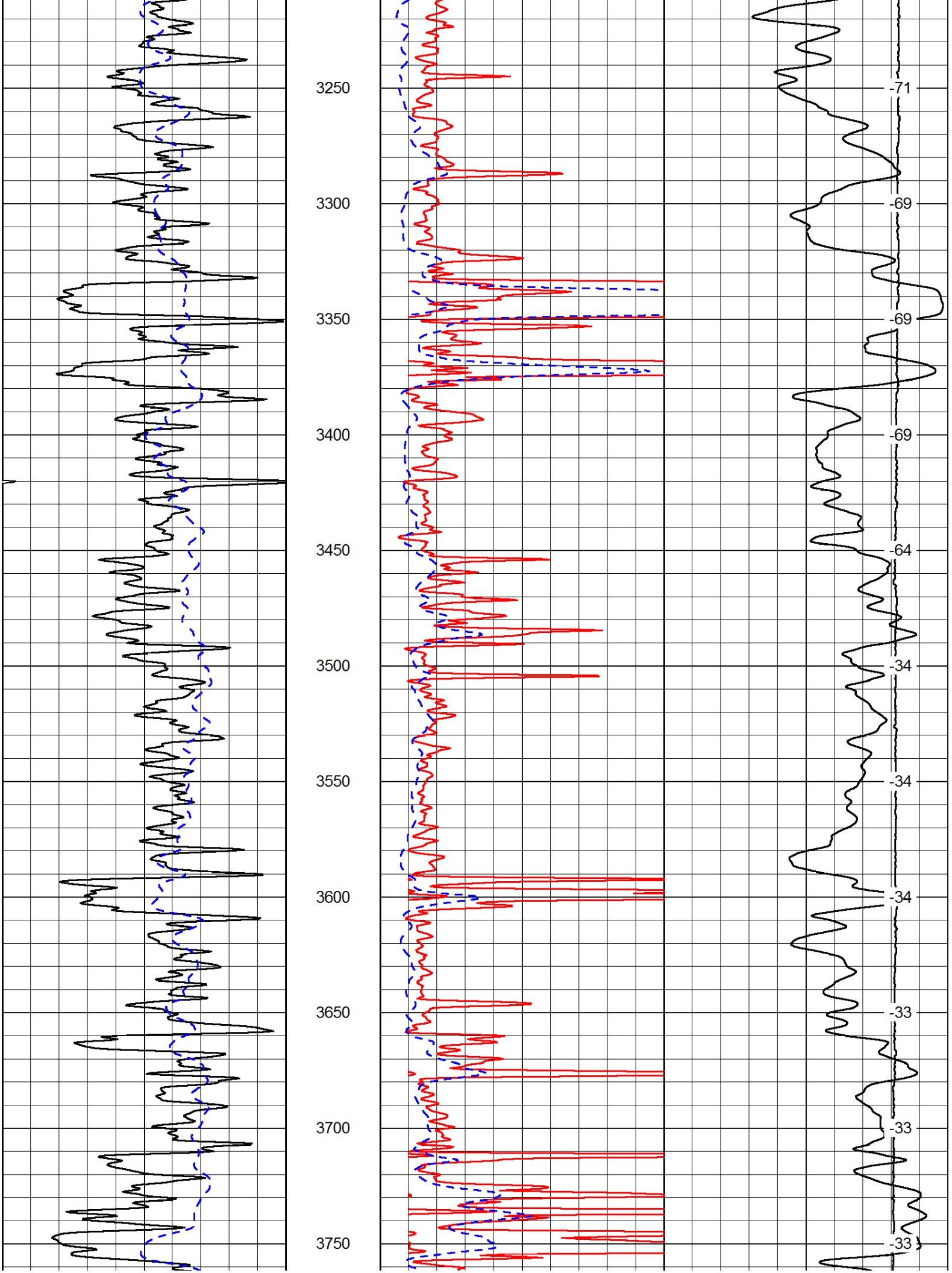

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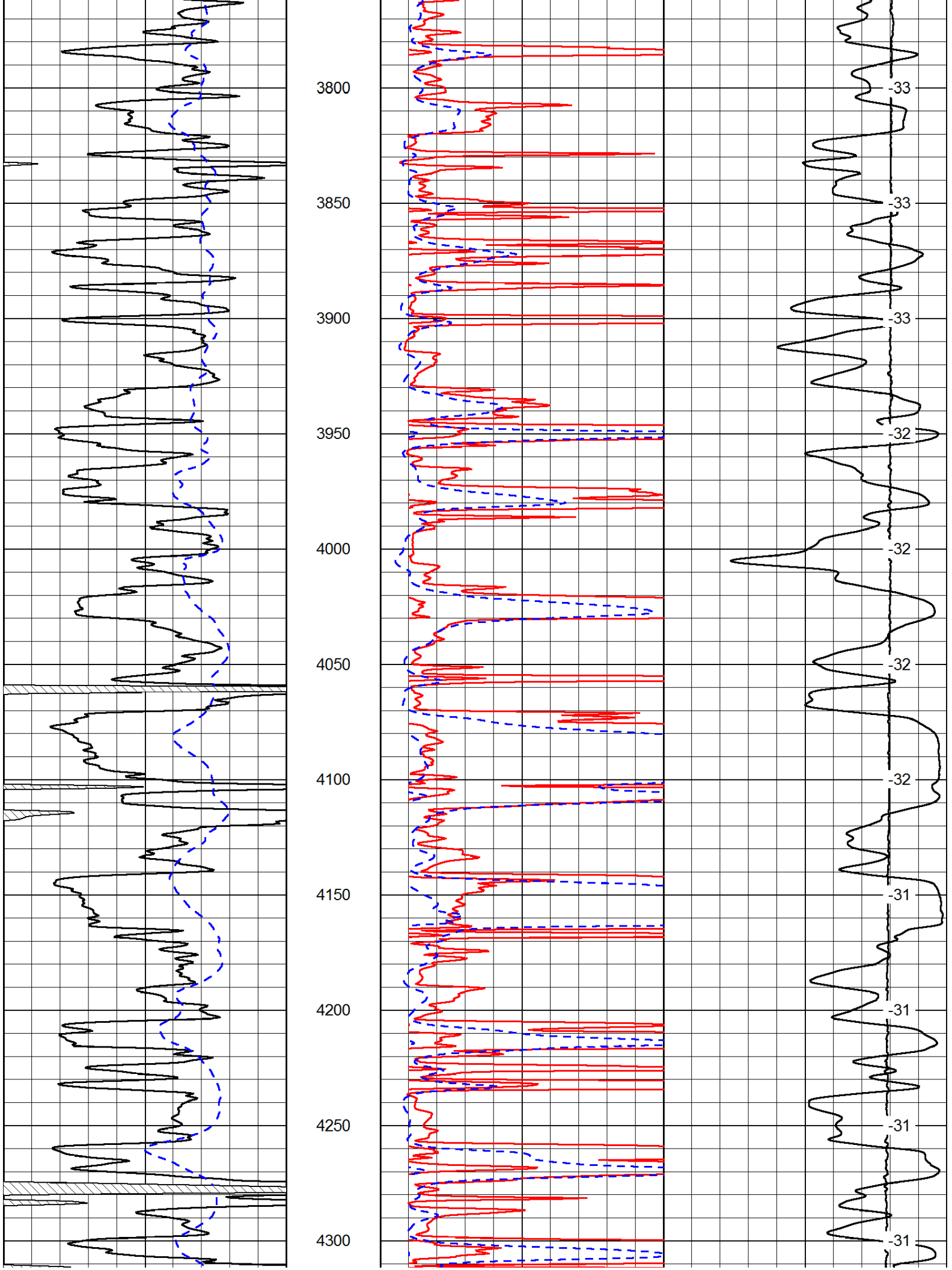

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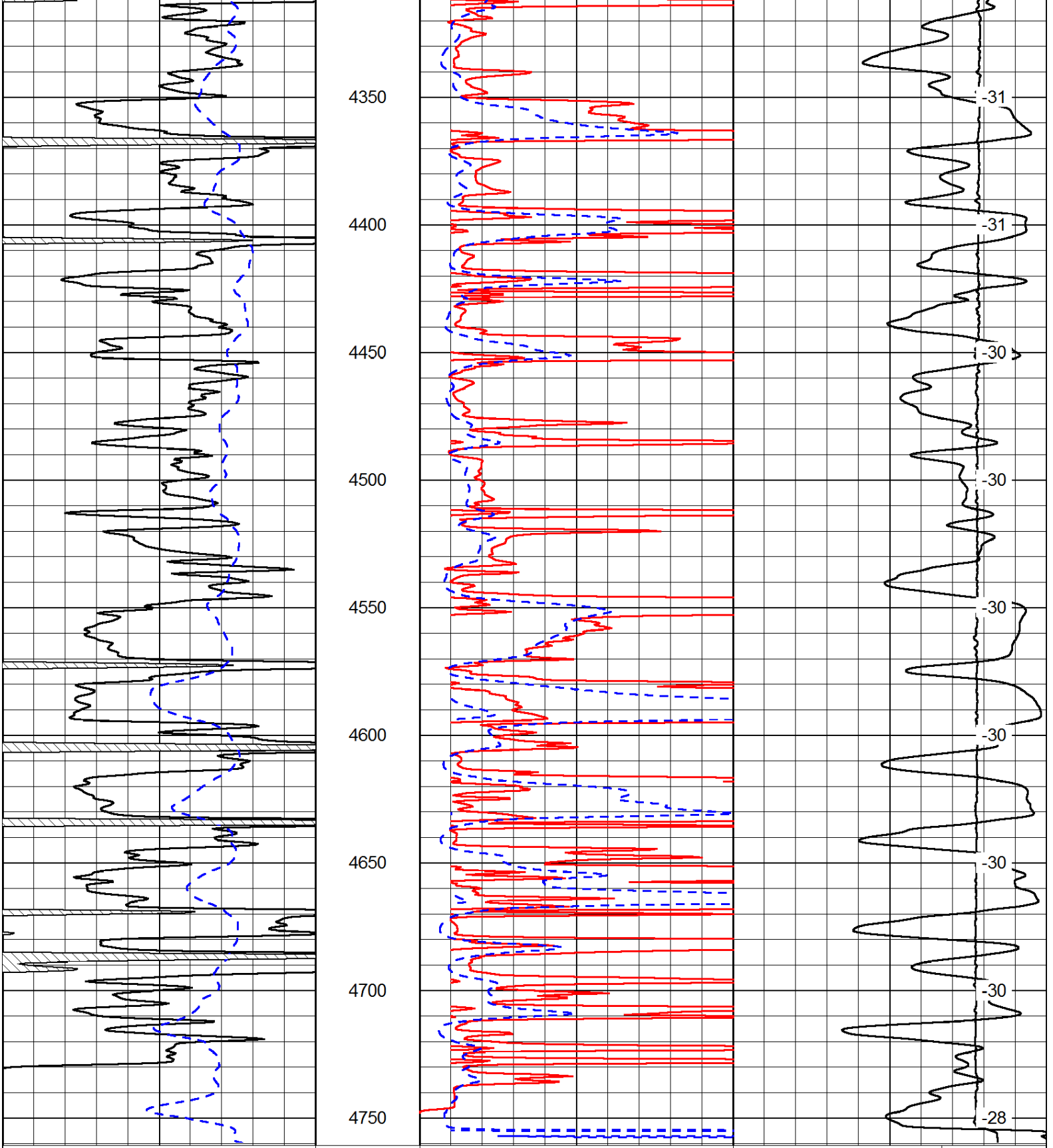

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2800
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3000
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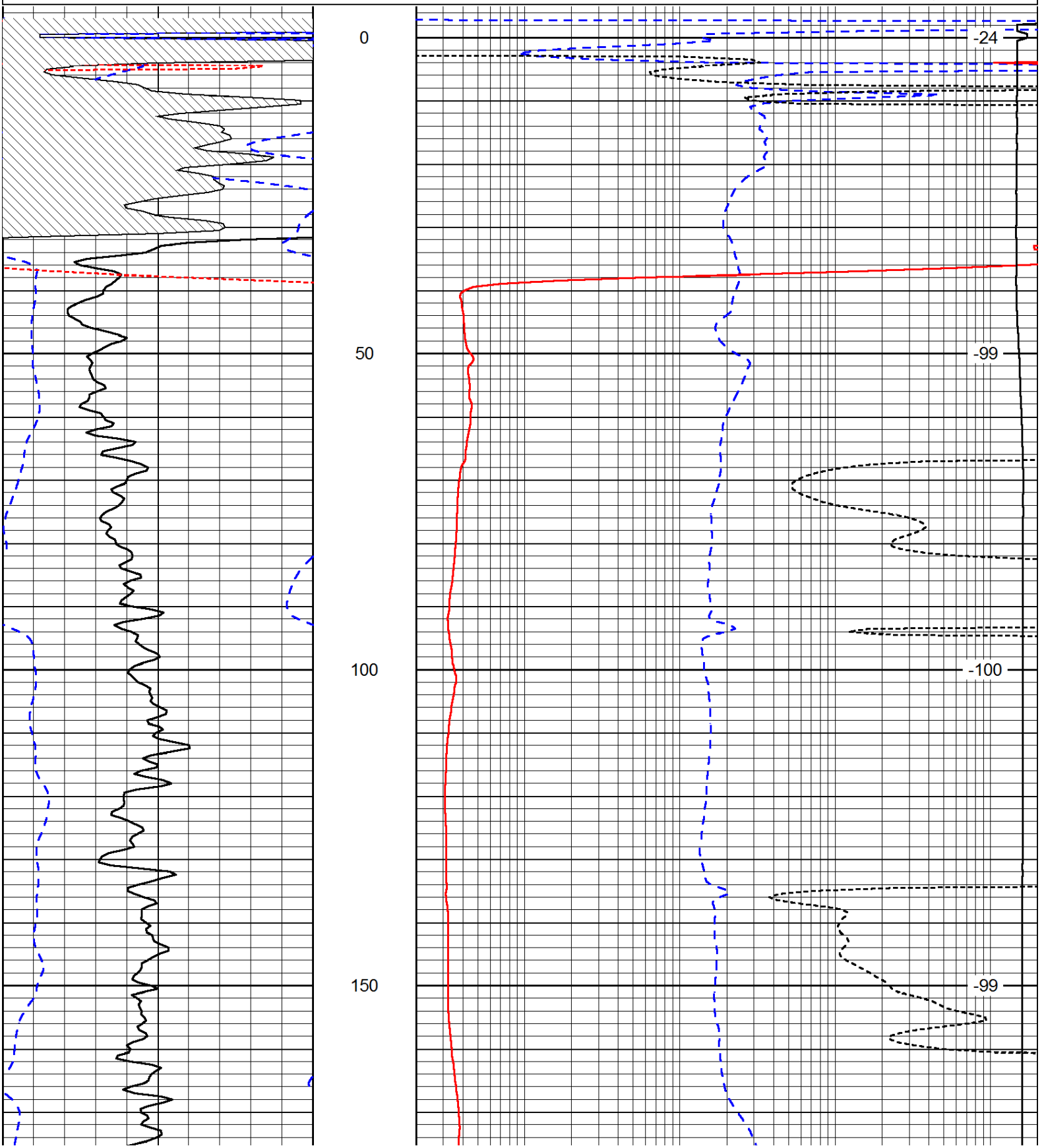
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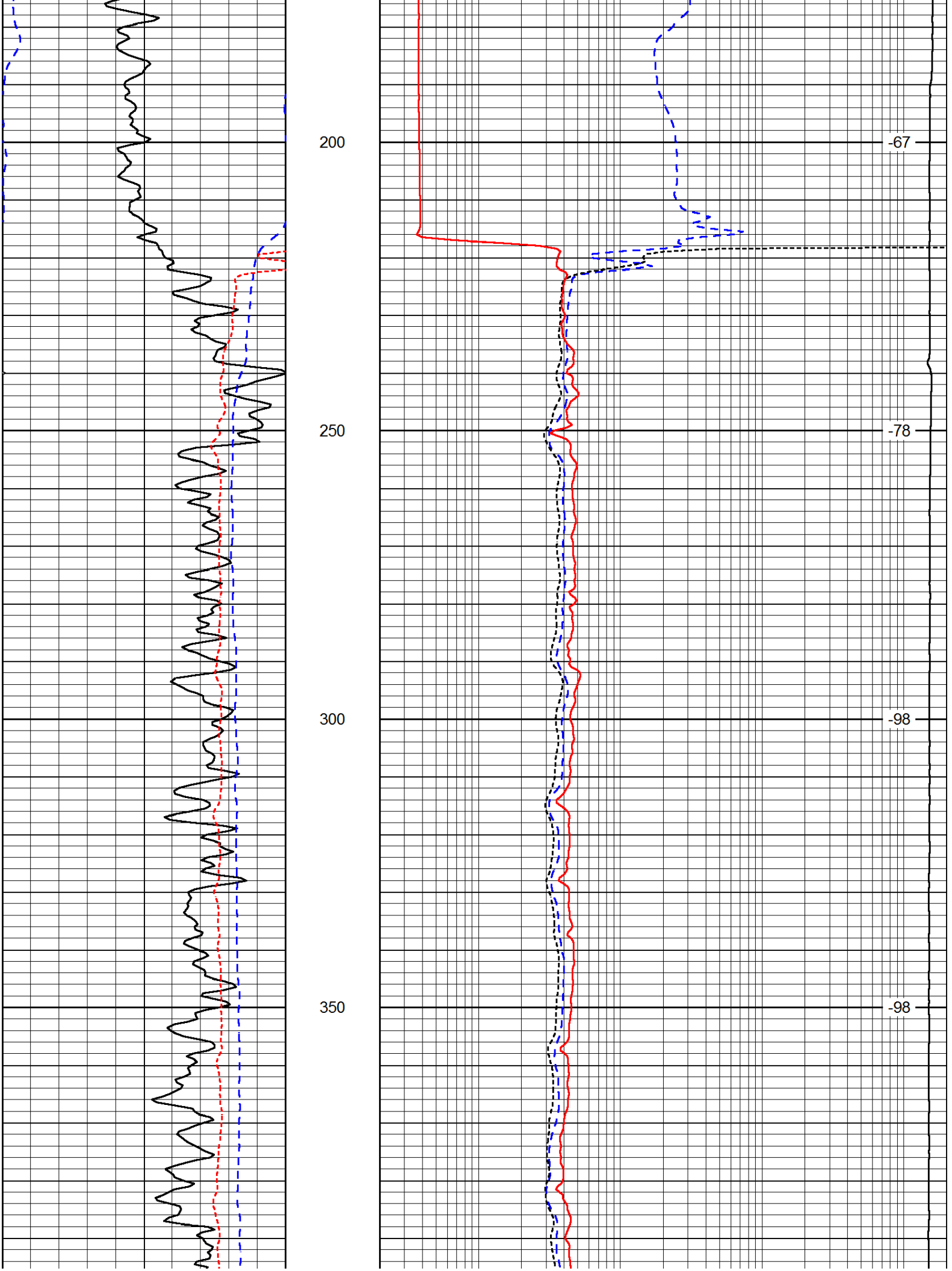
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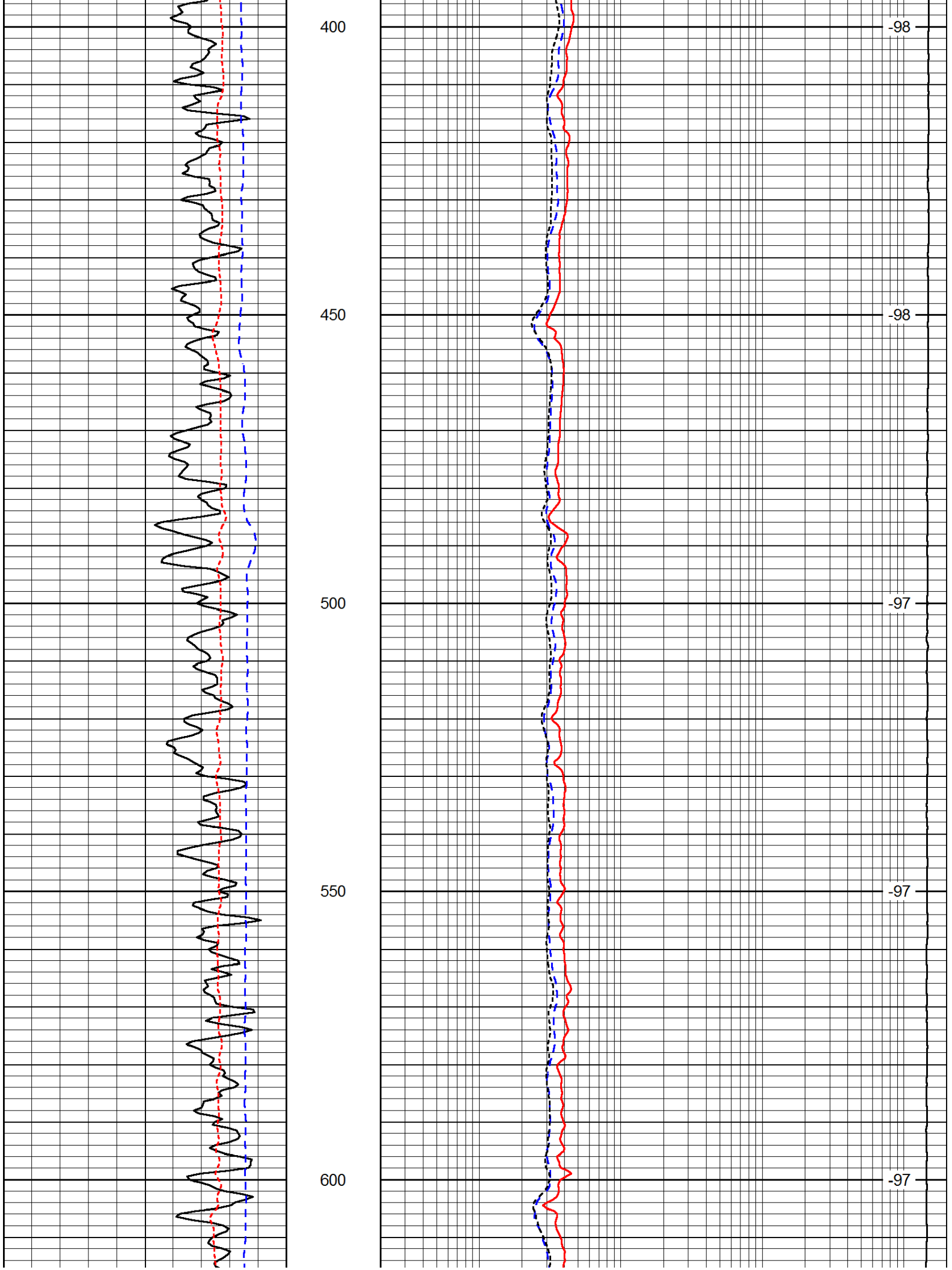
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-200	SP (mV)	0
-160	RxoRt	40

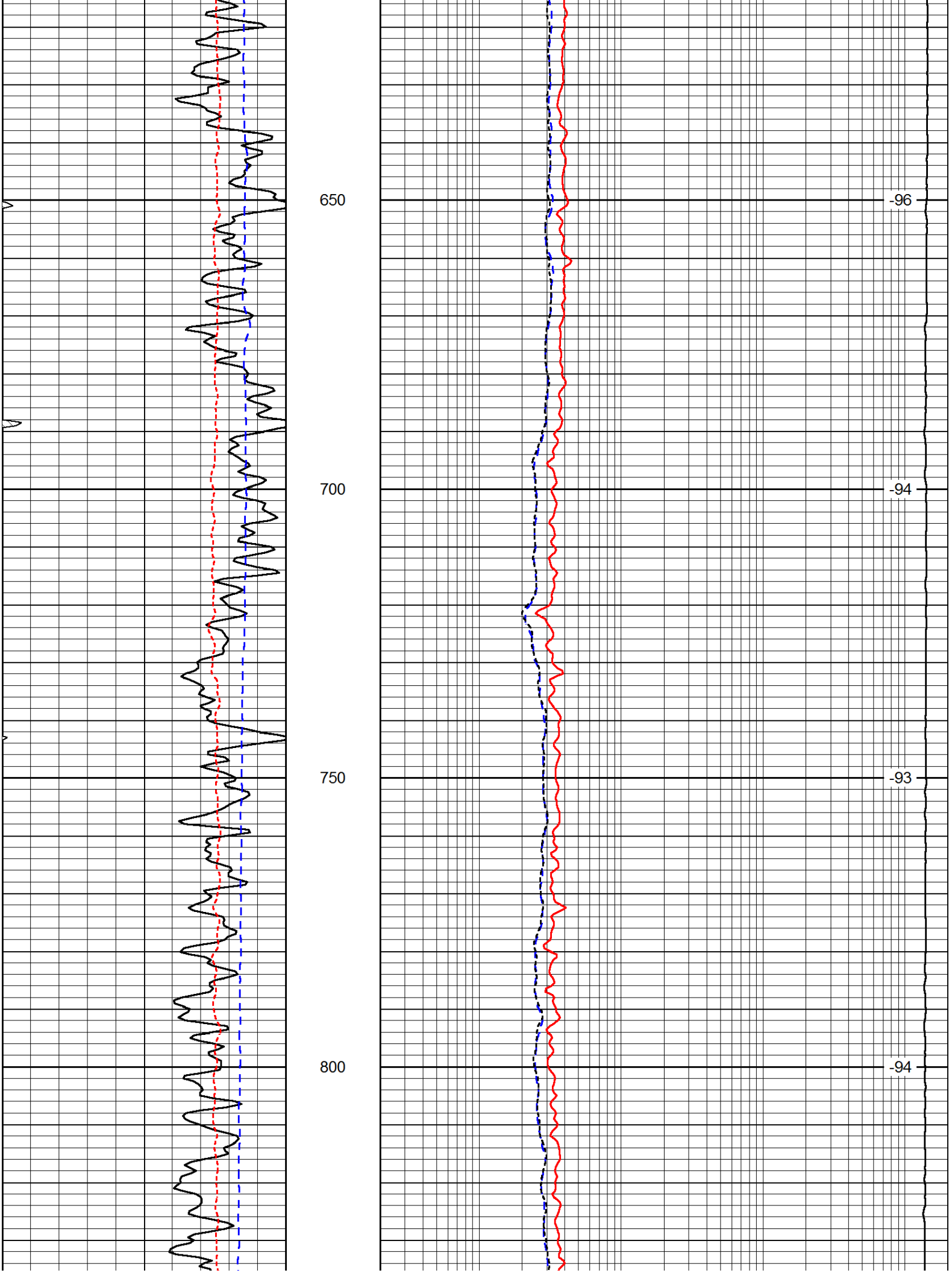
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0.2	Medium Resistivity	2000
0.2	Shallow Resistivity	2000
15000	Line Tension	0

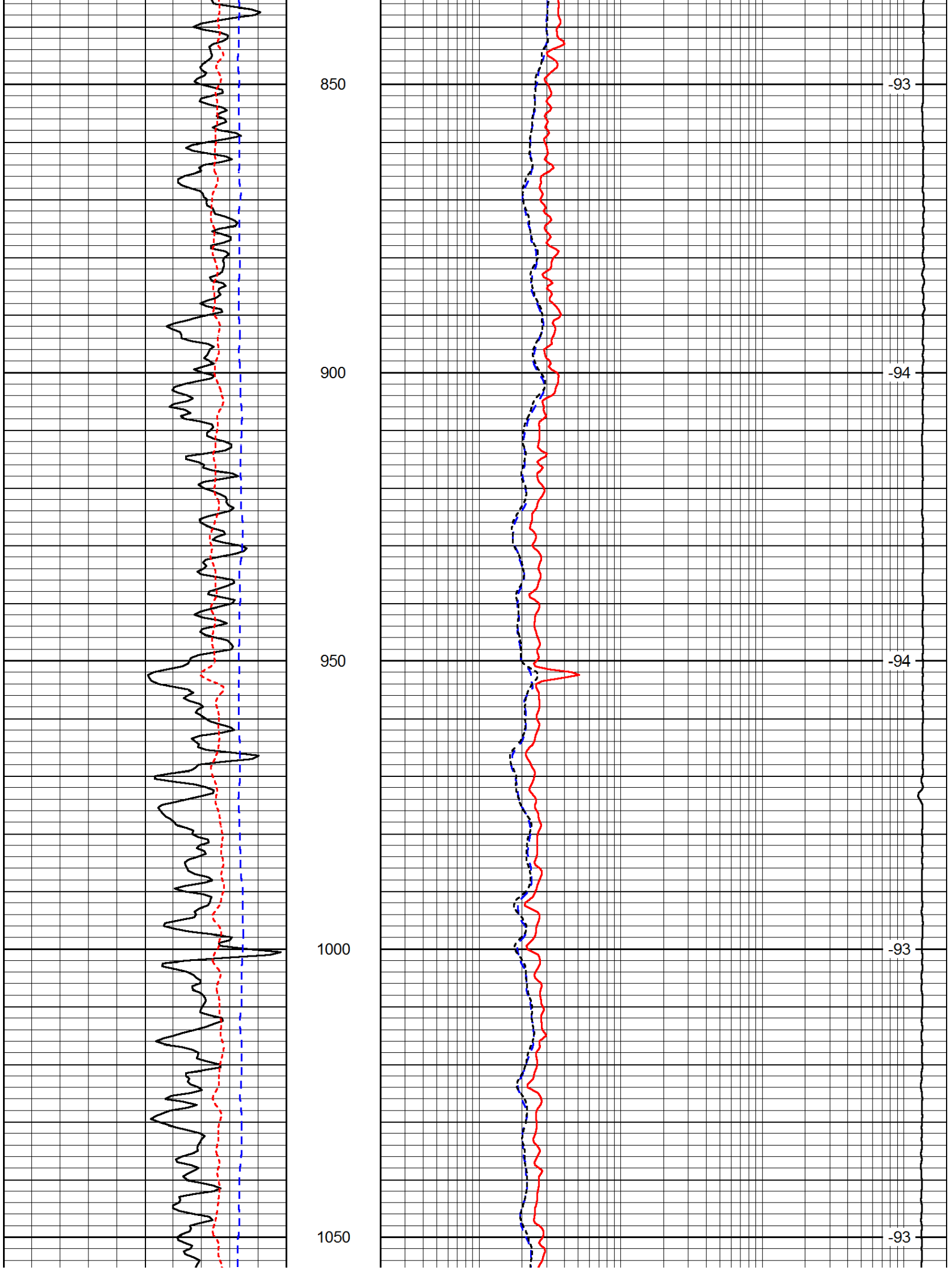
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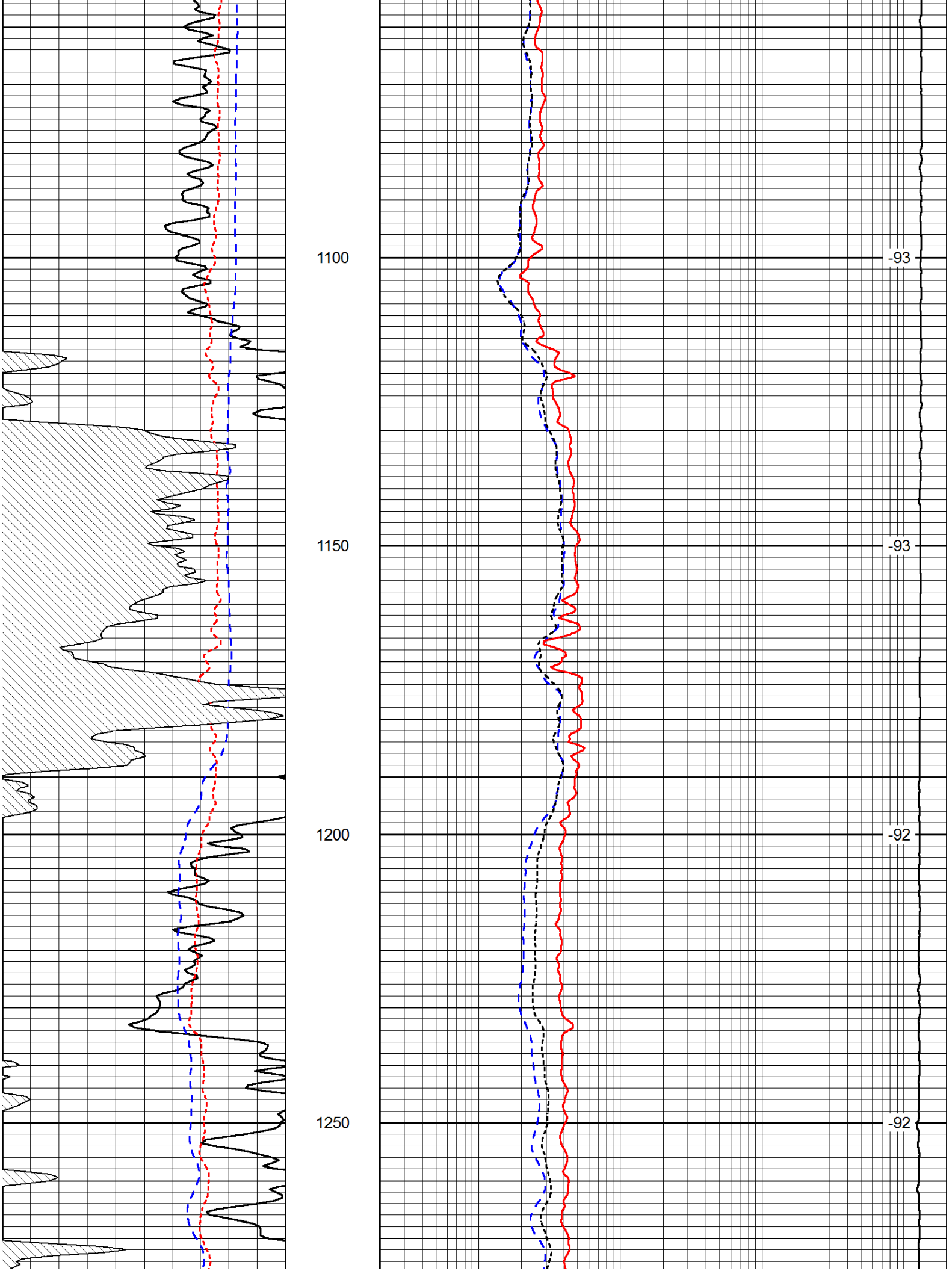


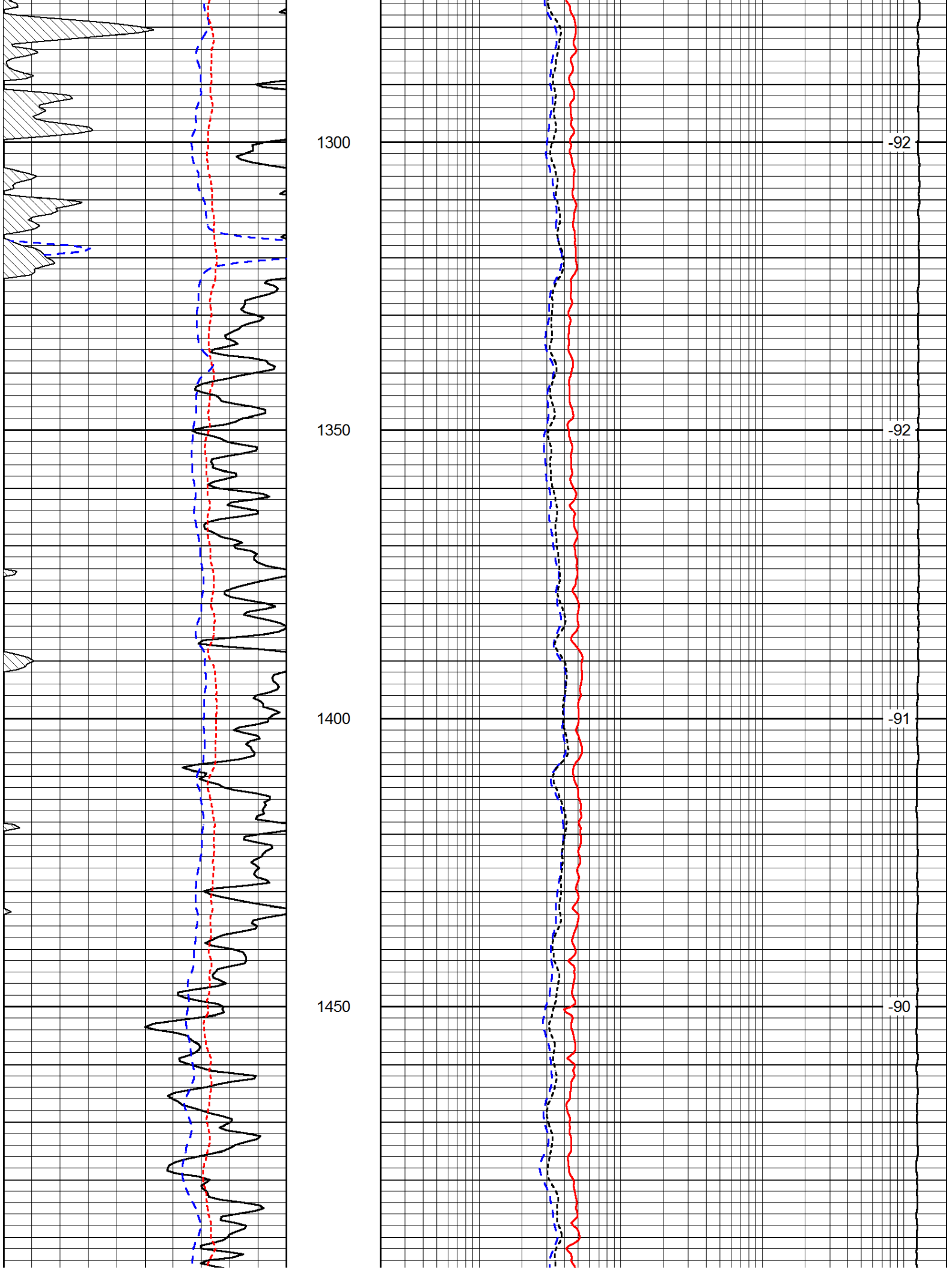

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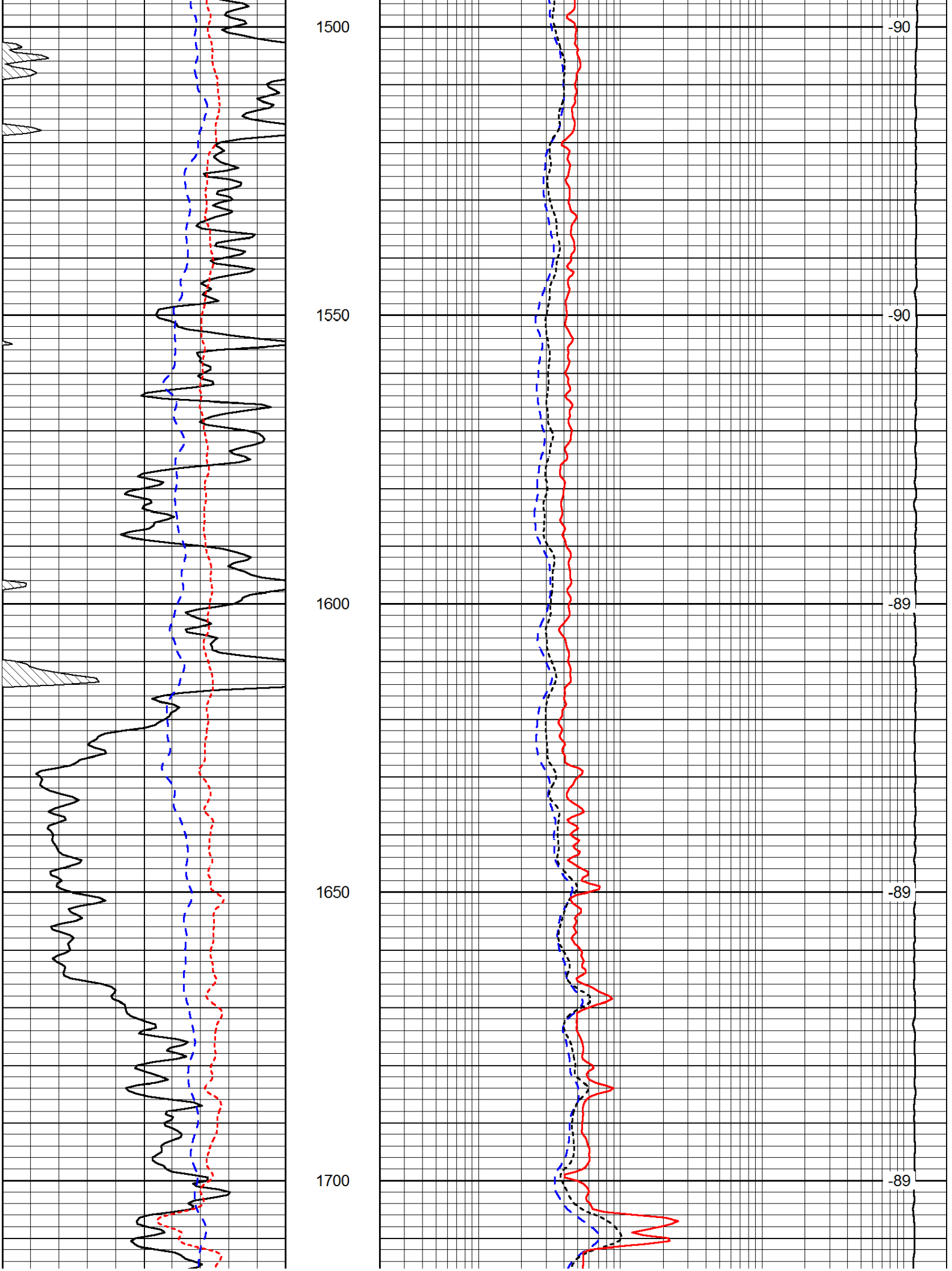

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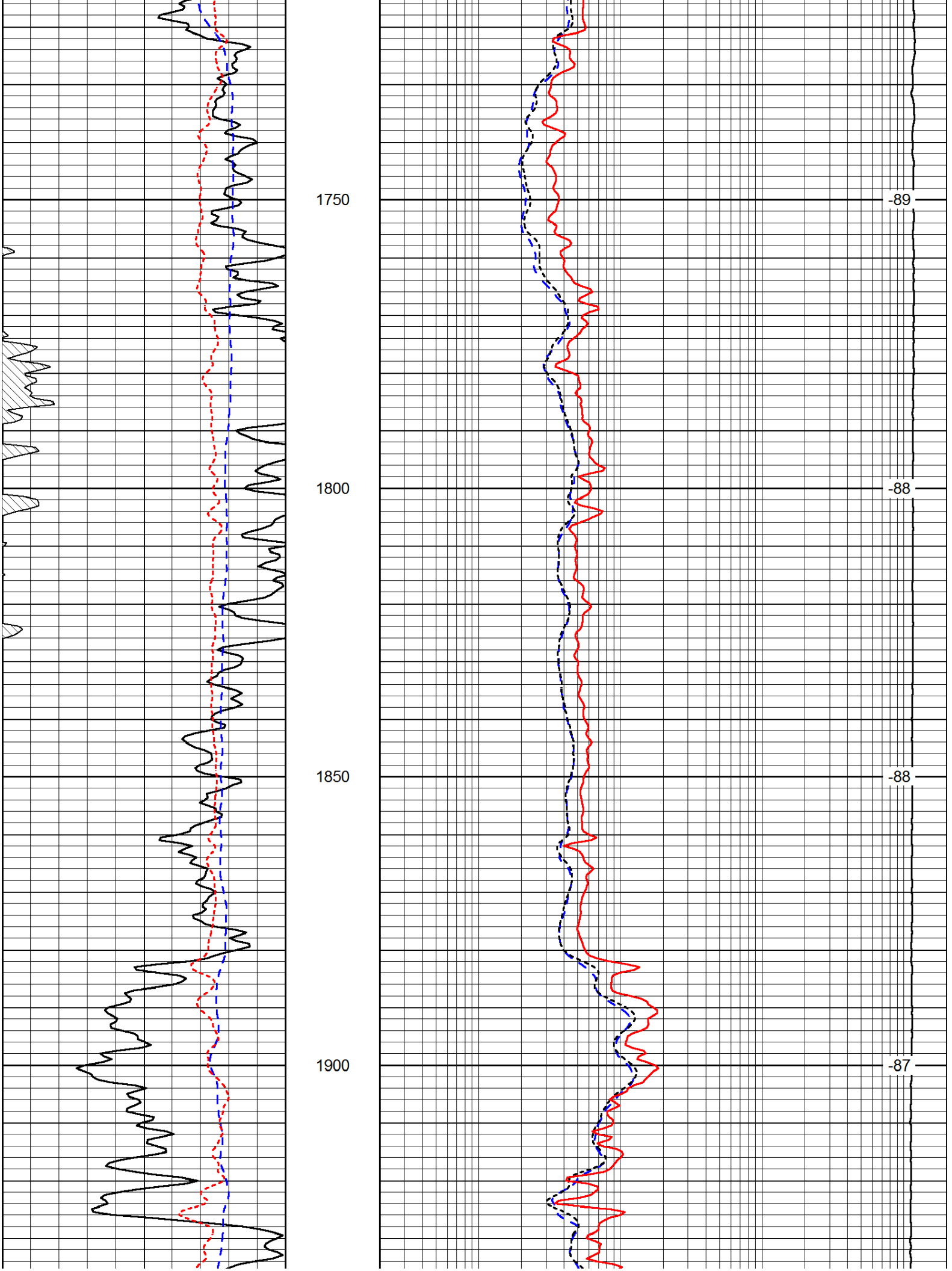

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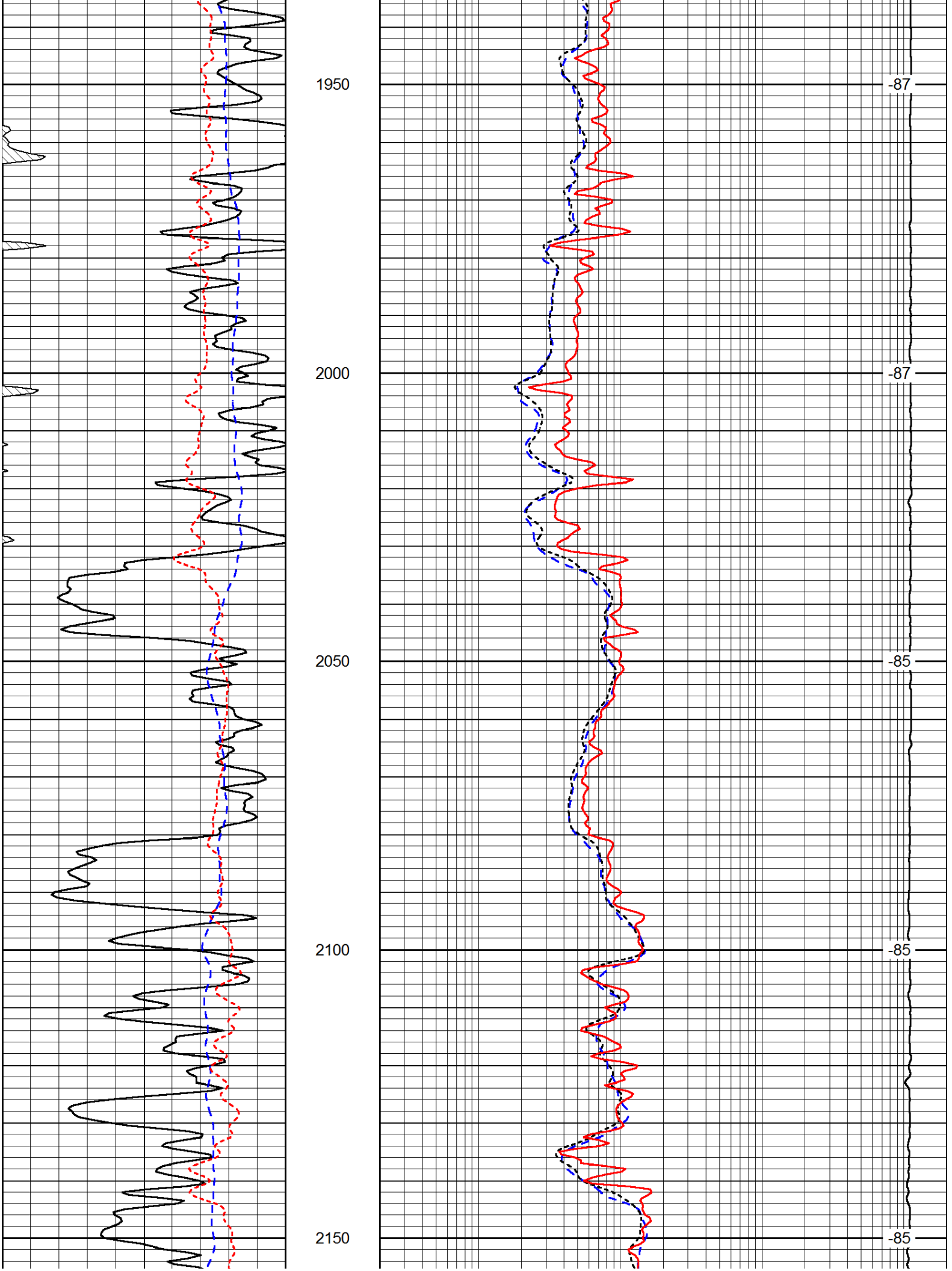

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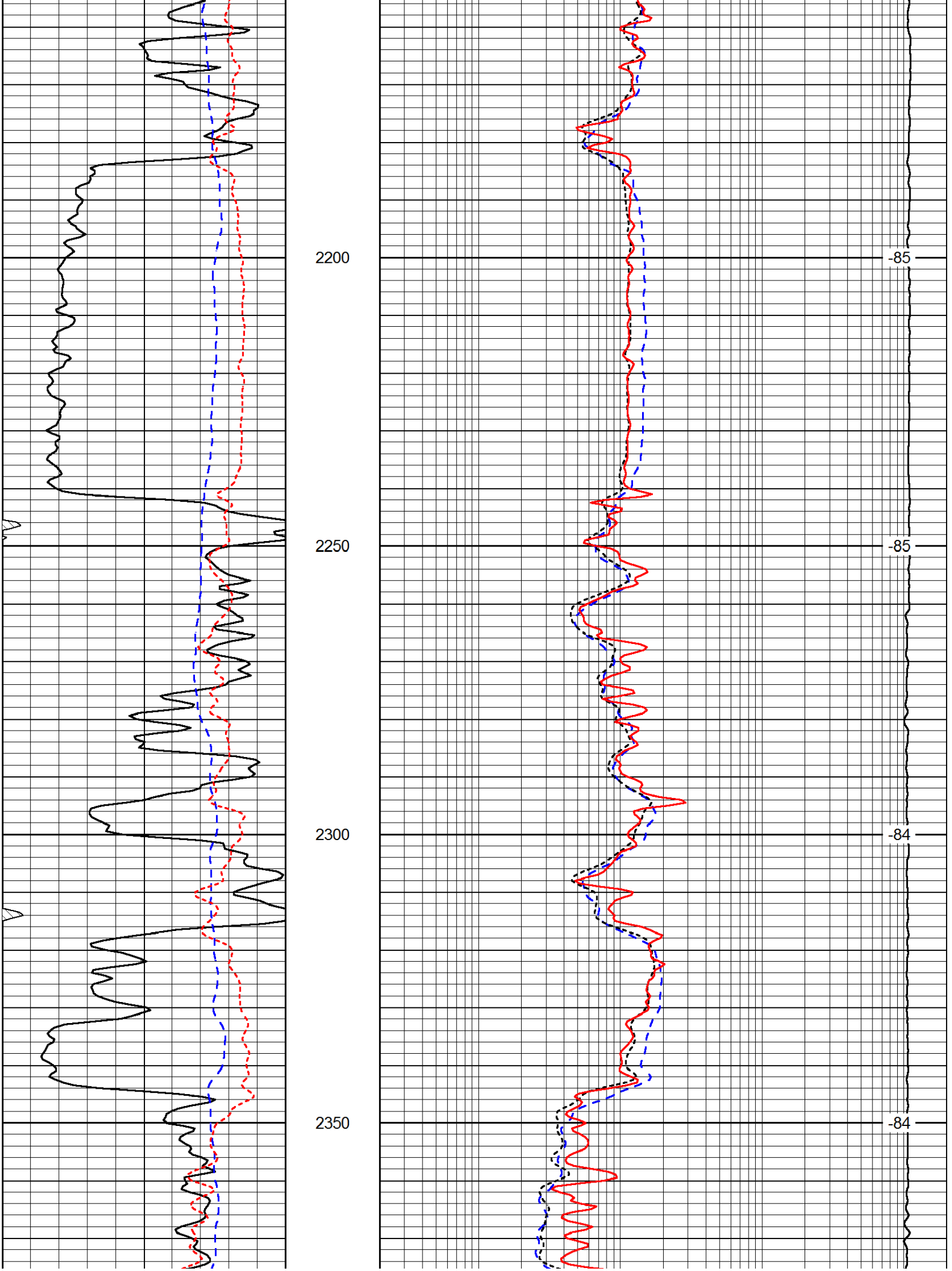

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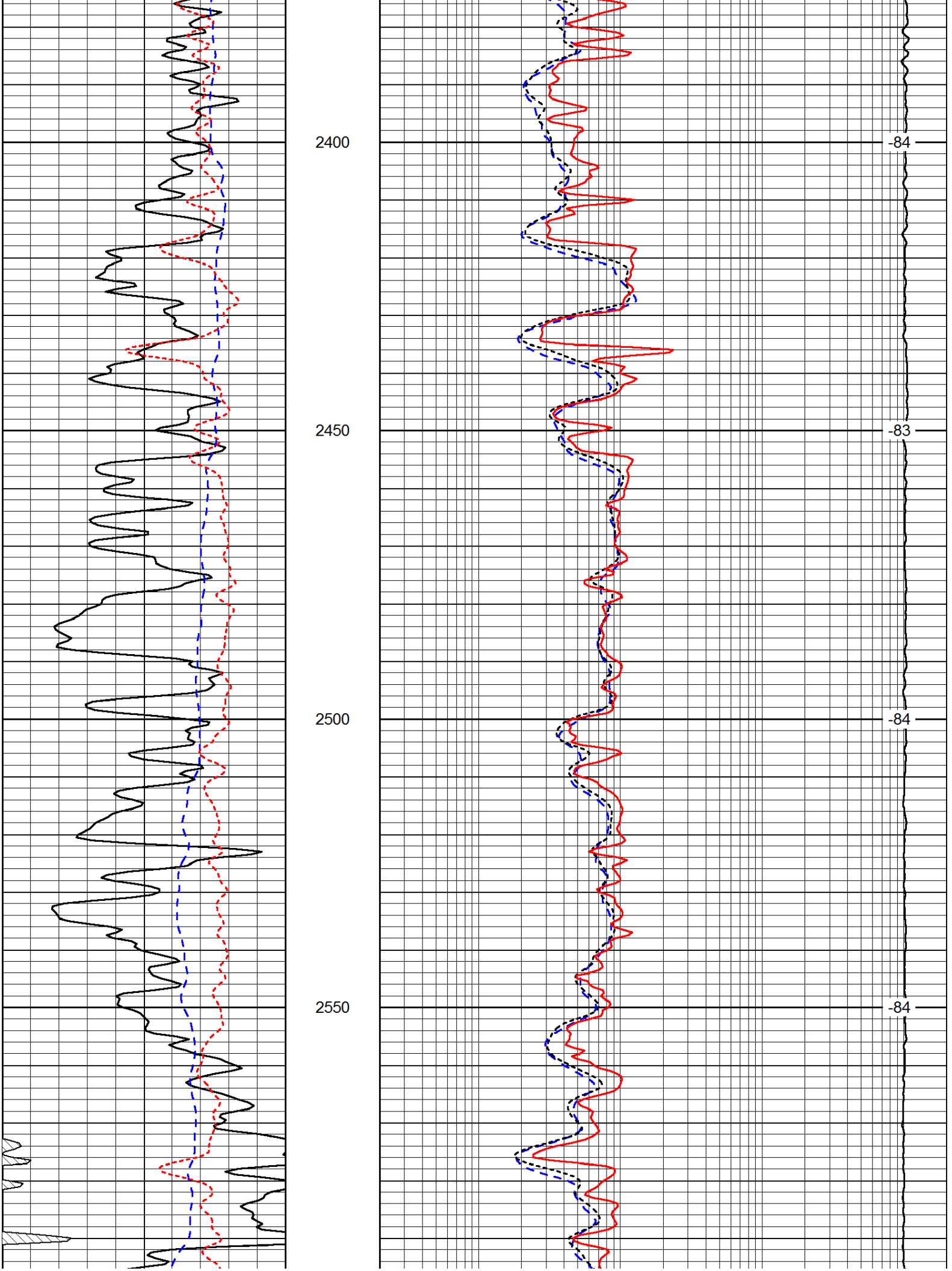

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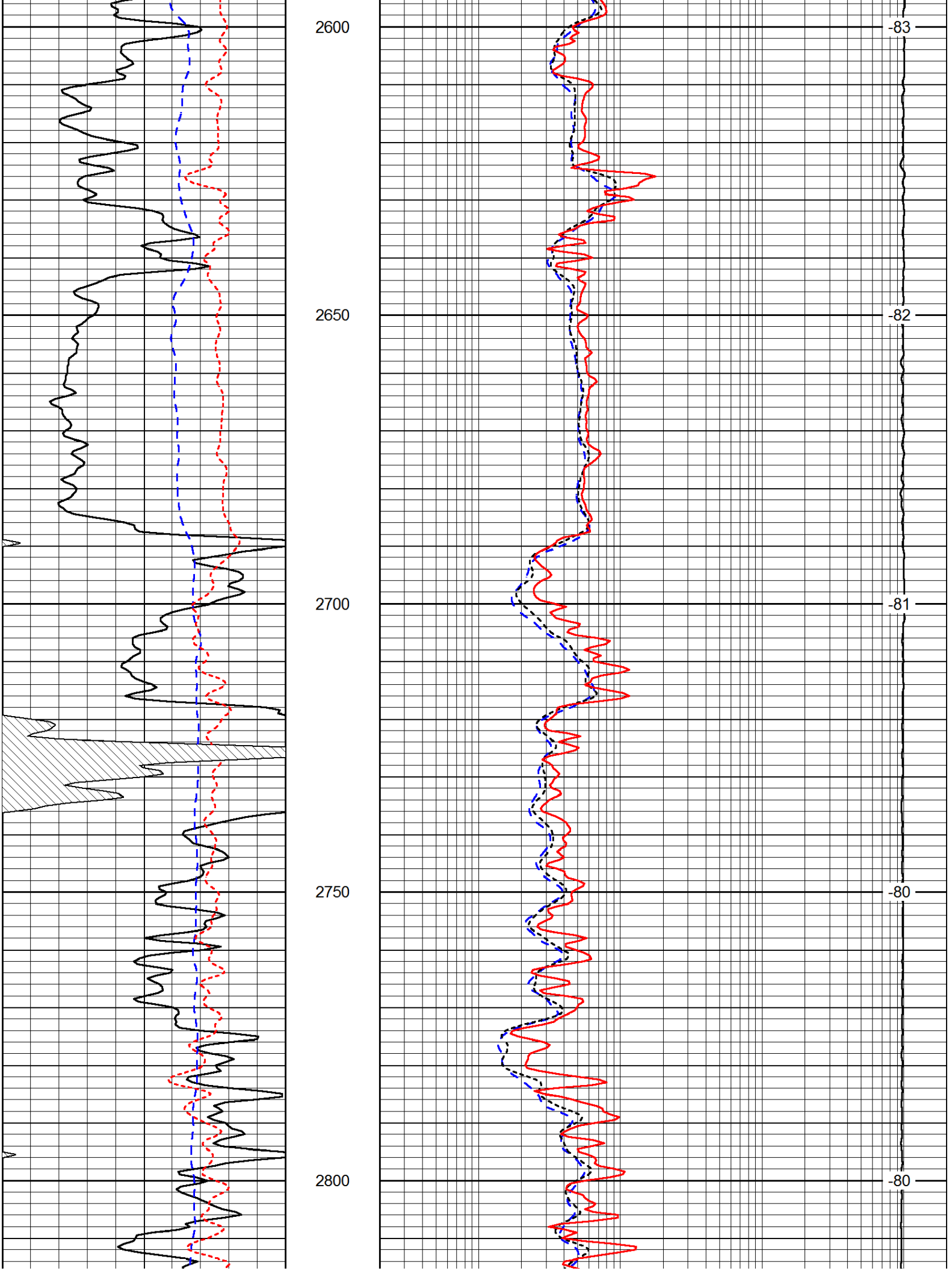

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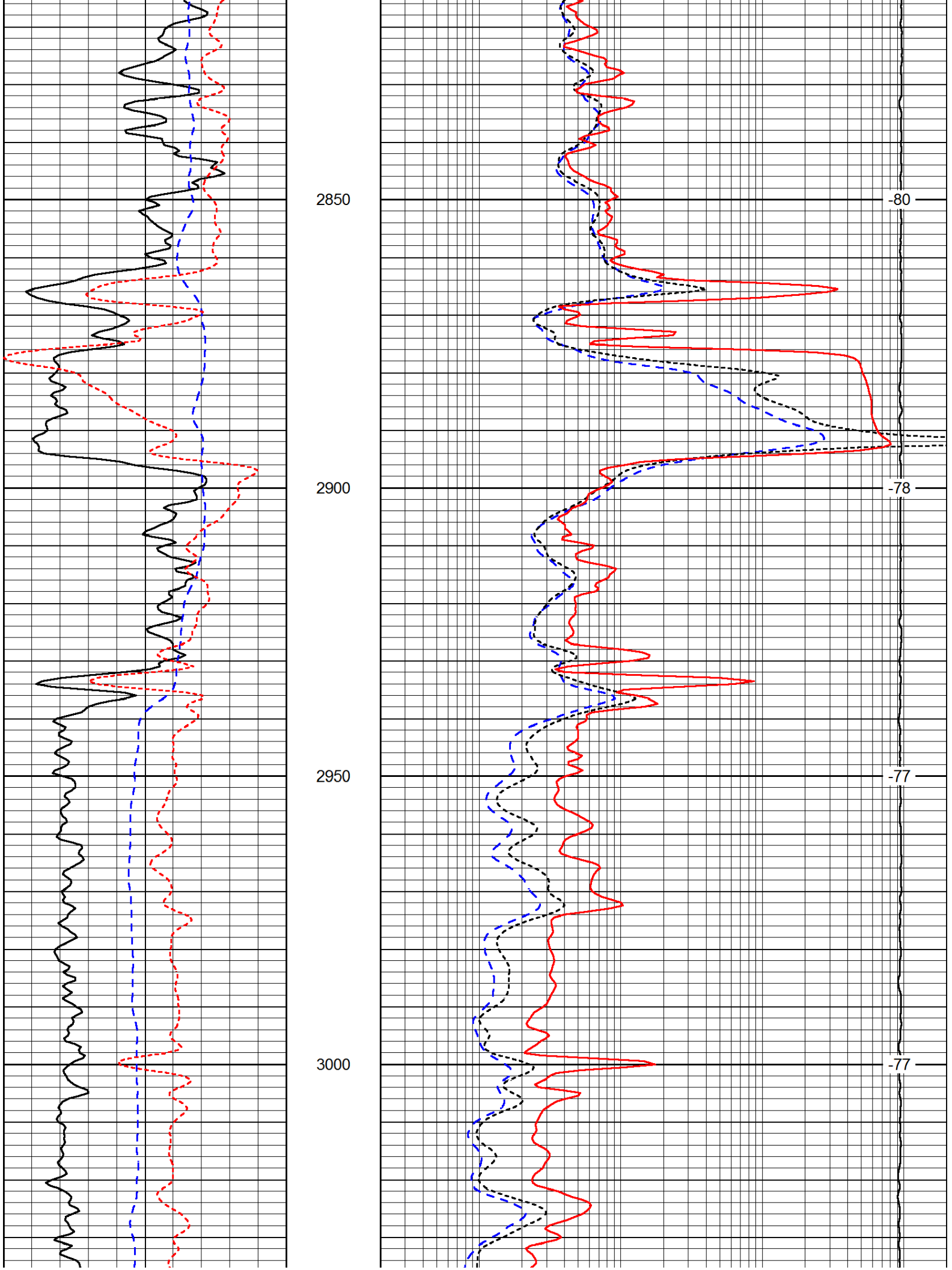

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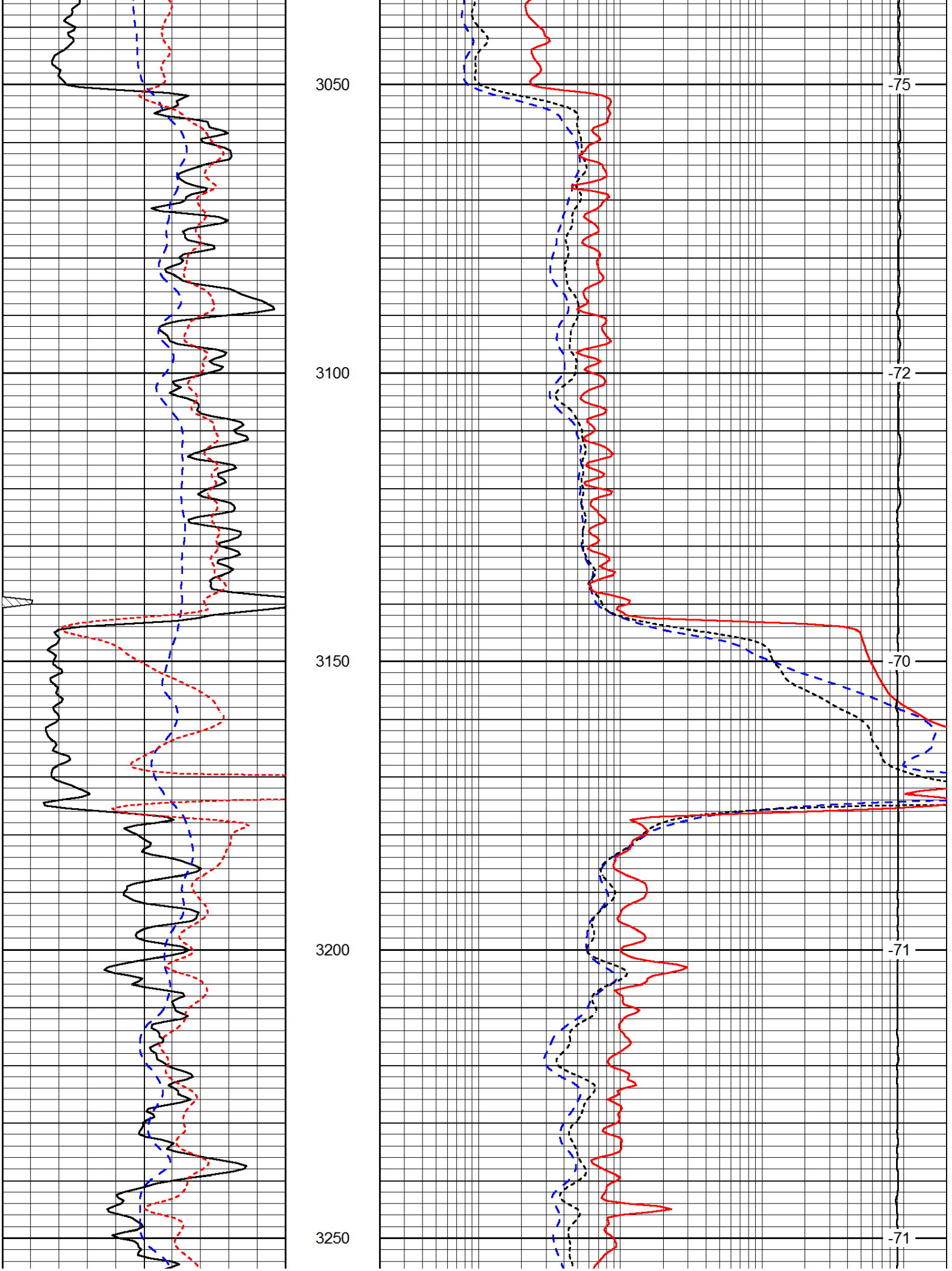

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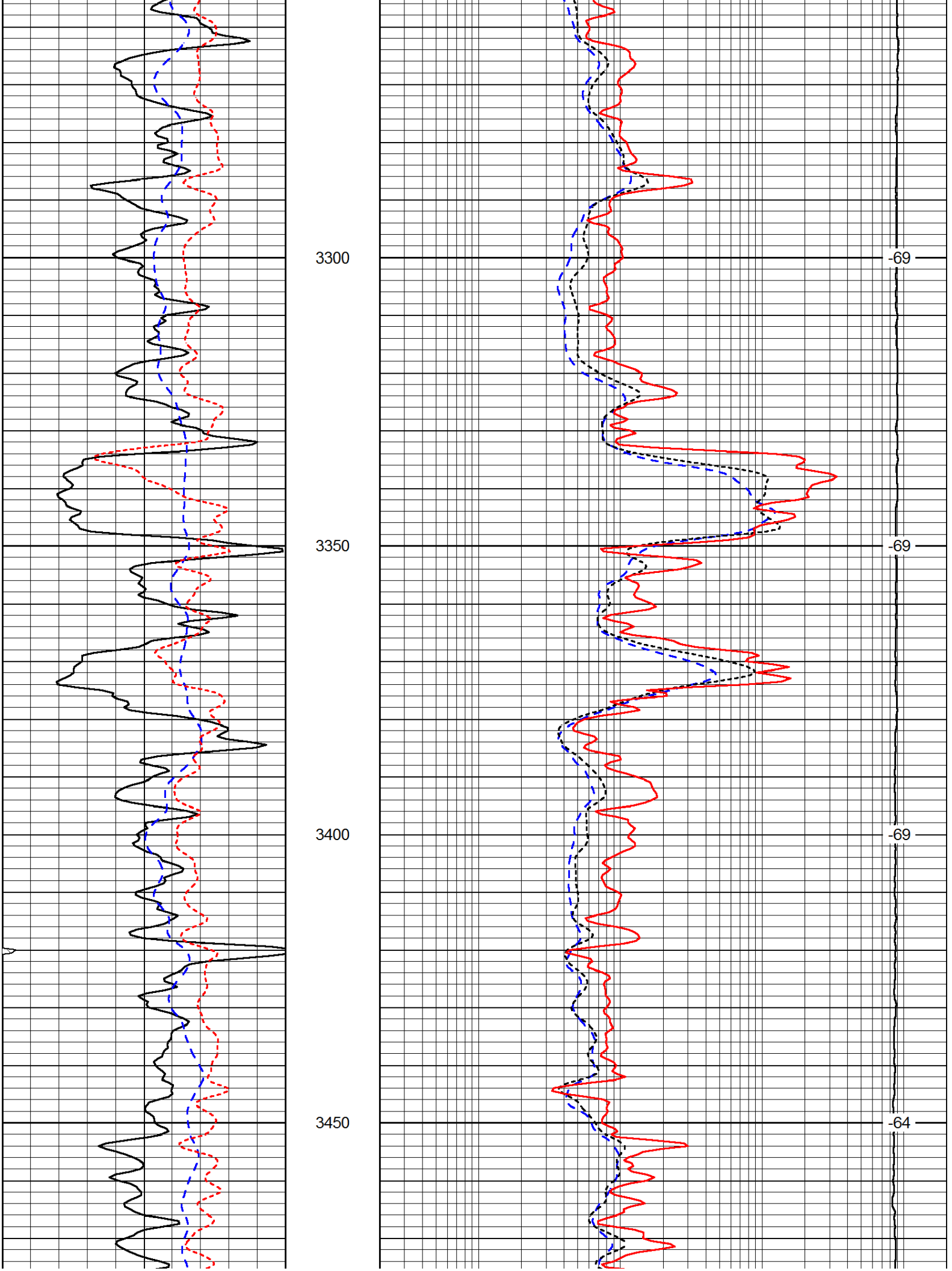

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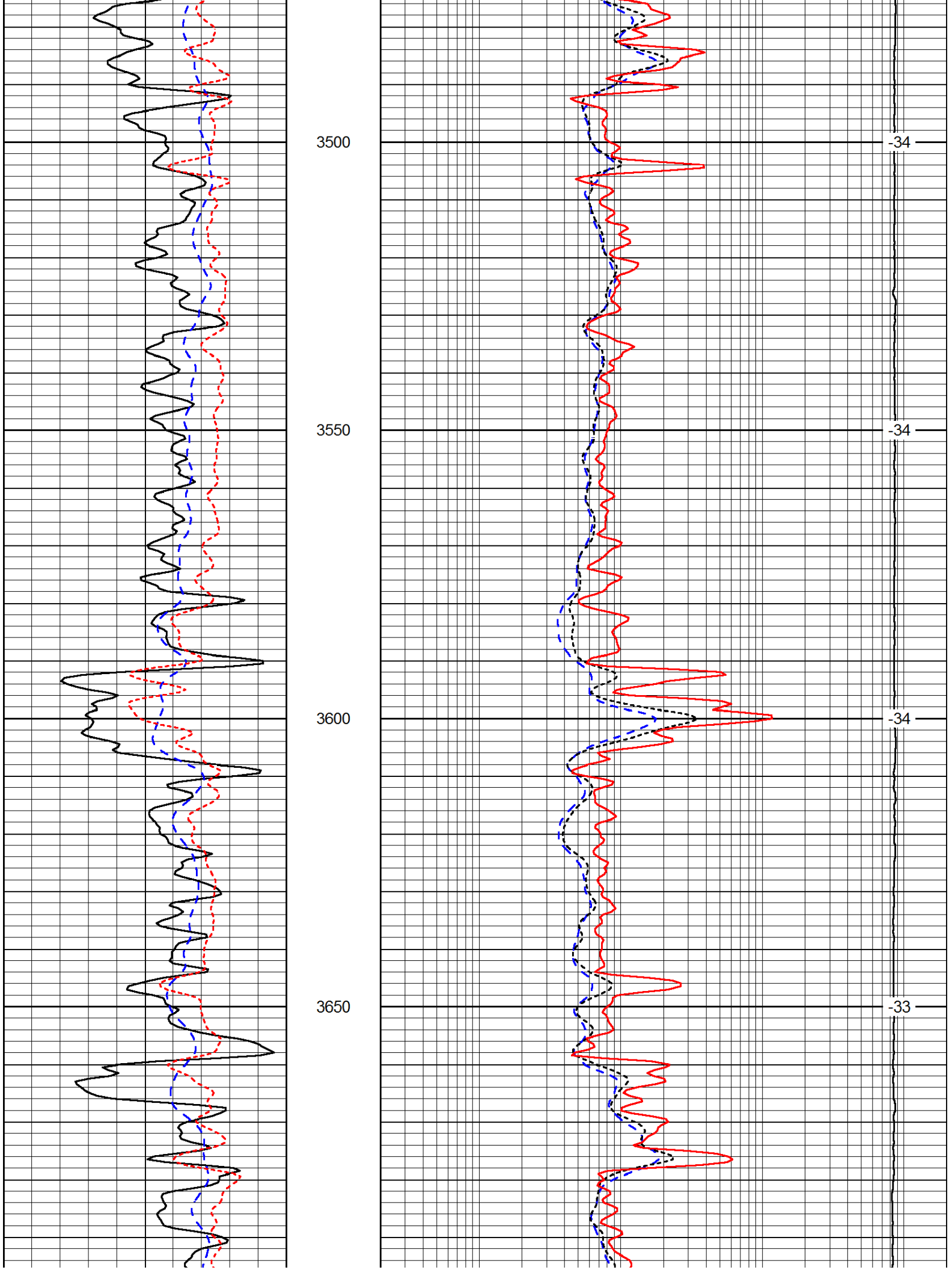

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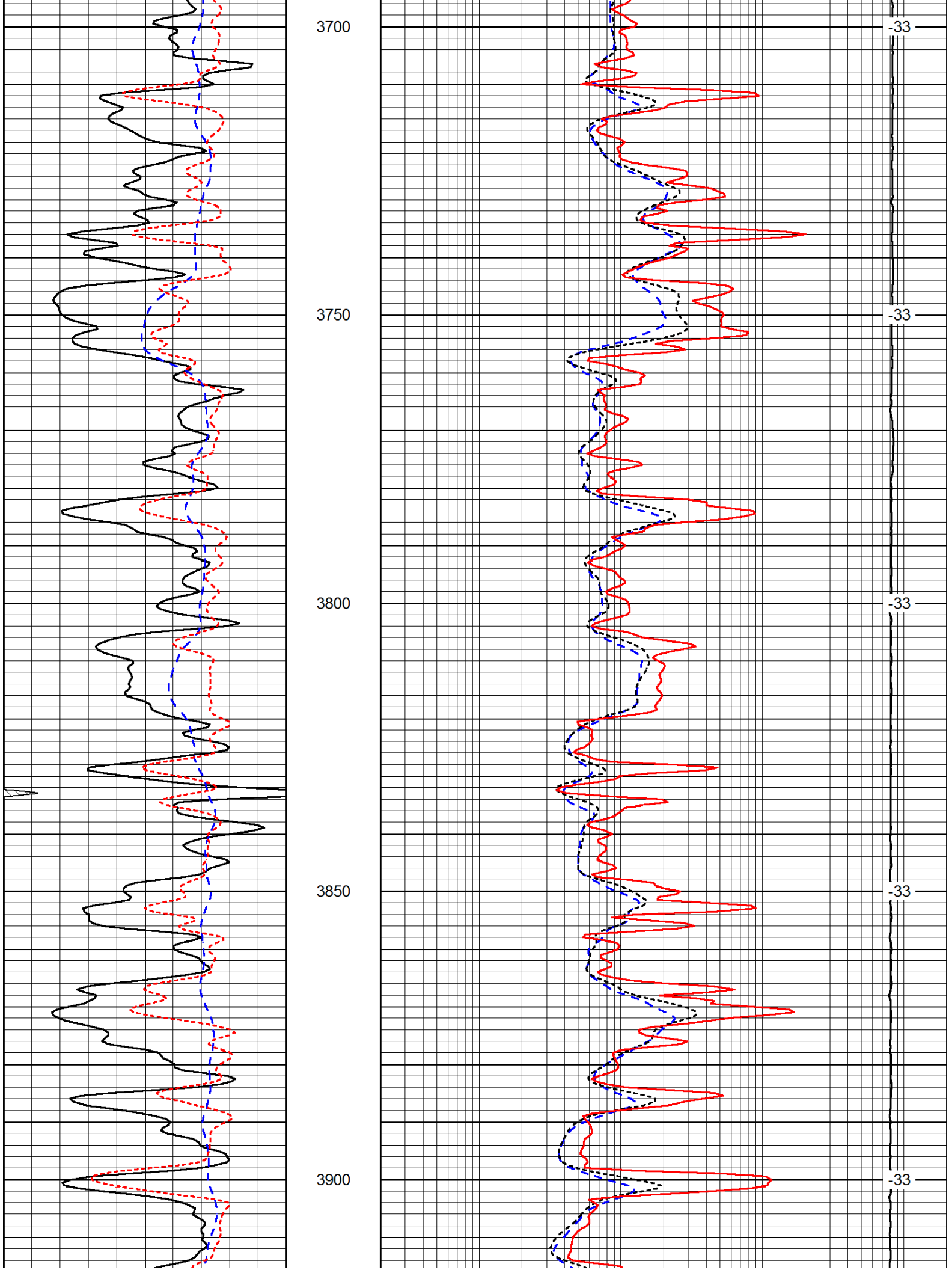

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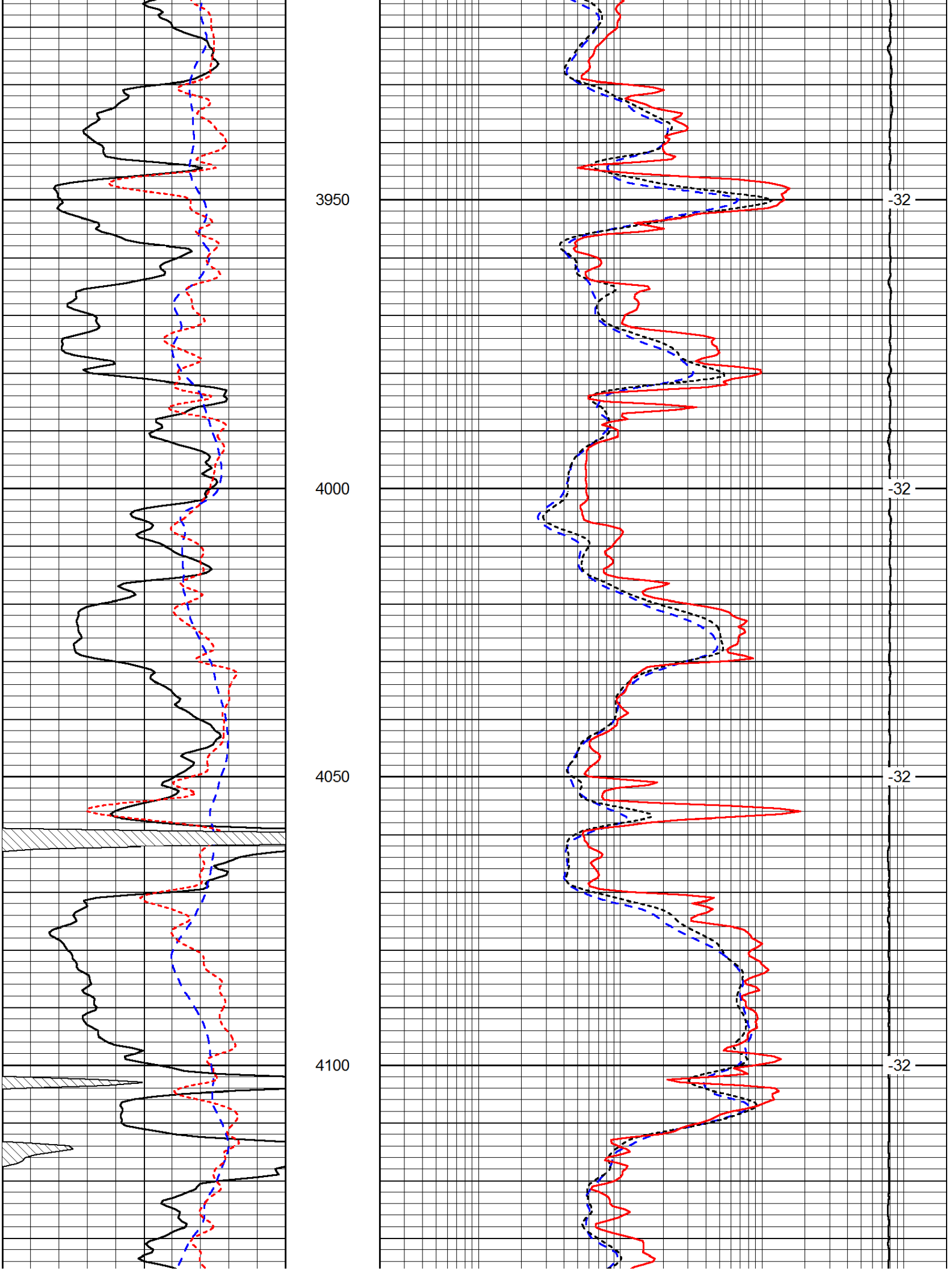

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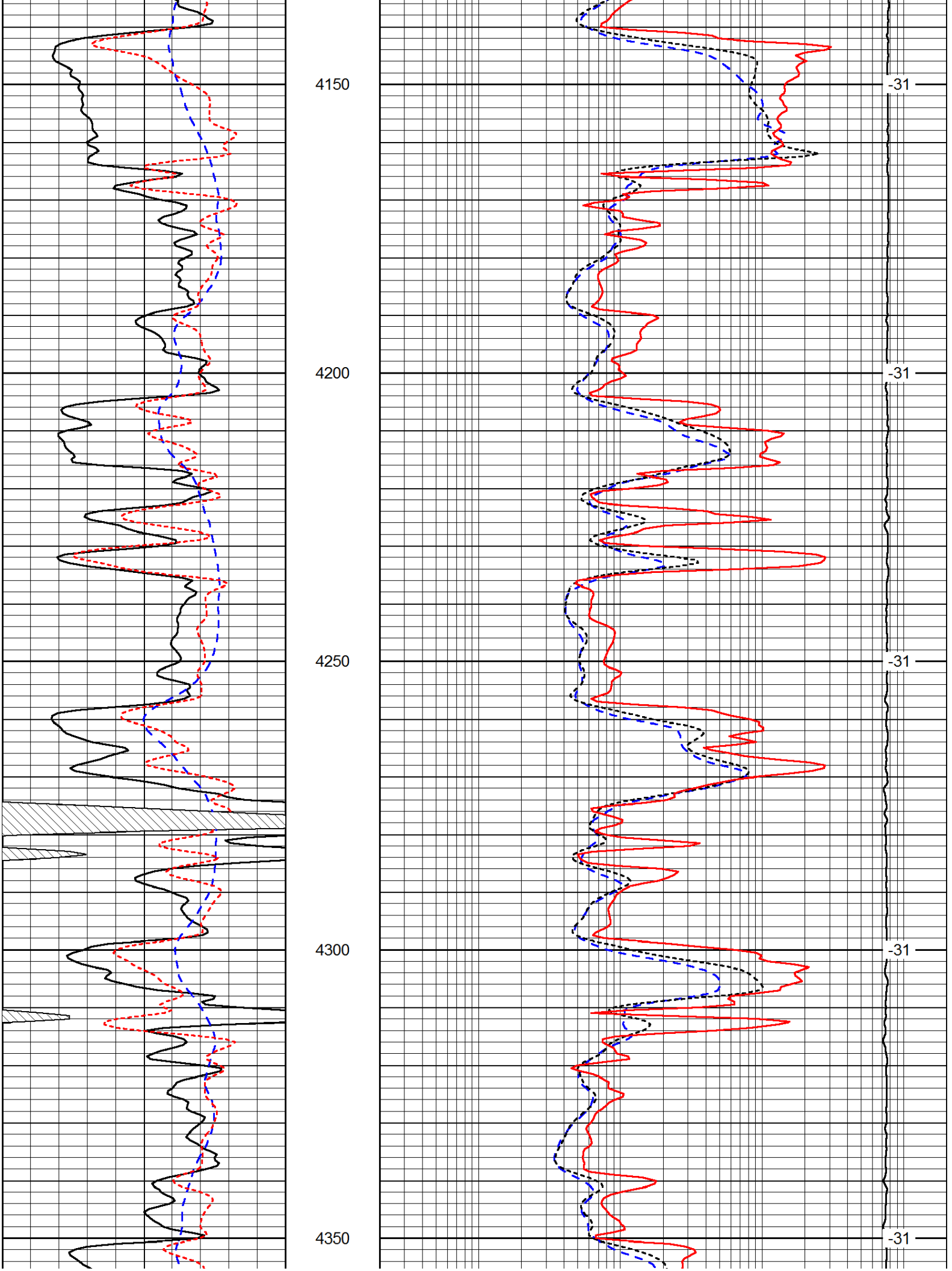

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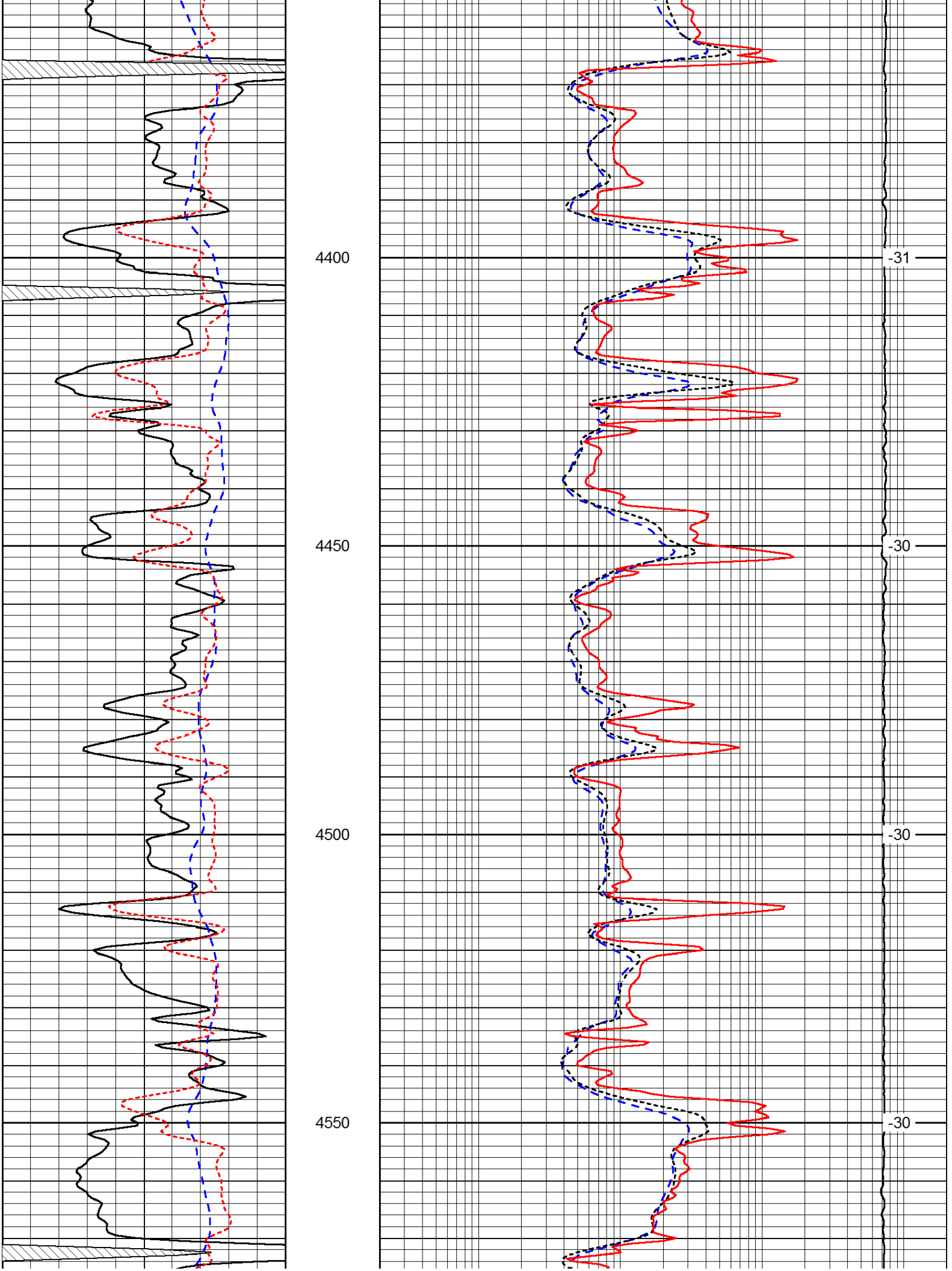

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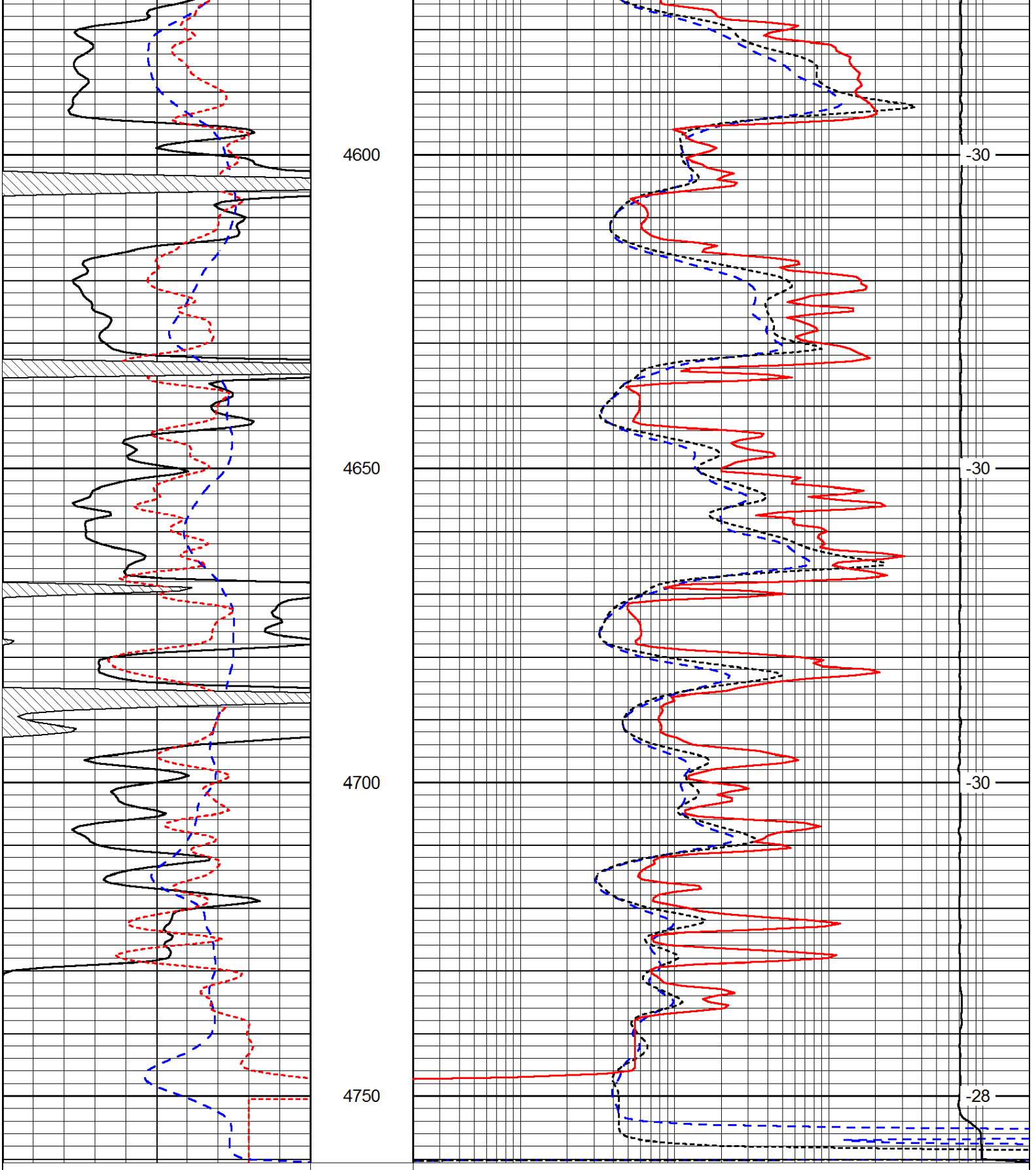

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-30
-30
-28
0
Gamma Ray
150
-200
SP (mV)
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-160
RxoRt
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0.2
Deep Resistivity
2000
0.2
Medium Resistivity
2000
0.2
Shallow Resistivity
2000
15000
Line Tension
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LSPD