



Pioneer Energy Services

Dual Induction Log

API No.	Company K-Bar Oil Well Hawk No. 15 Field Edmonds County Marion State Kansas			
15-115-21,462-00-00	Location	SW-SW-NE-NE 1050' FNL & 1282' FEL		Other Services CNL/CDL MEL
	Sec: 31	Twp: 22S	Rge: 4E	Elevation K.B. 1403 D.F. 1397 G.L. 1397
Permanent Datum	Ground Level	Elevation 1397		
Log Measured From	Ground Level	0 Ft. Above Perm. Datum		
Drilling Measured From	Ground Level			
Date	1/18/14			
Run Number	One			
Depth Driller	2783			
Depth Logger	2776			
Bottom Logged Interval	2775			
Top Log Interval	200			
Casing Driller	8.625 @ 207			
Casing Logger	208			
Bit Size	7.875			
Type Fluid in Hole	Chemical			
Salinity,ppm CL	1,200			
Density / Viscosity	9.4 36			
pH / Fluid Loss	9.0 9.6			
Source of Sample	Flowline			
Rm @ Meas. Temp	2.0 @ 50			
Rmf @ Meas. Temp	1.5 @ 50			
Rmc @ Meas. Temp	2.7 @ 50			
Source of Rmf / Rmc	Charts			
Rm @ BHT	.96 @ 104			
Operating Rig Time	3 Hours			
Max Rec. Temp. F	104			
Equipment Number	108			
Location	Hays			
Recorded By	J. Henrickson			
Witnessed By	Steve Reed			

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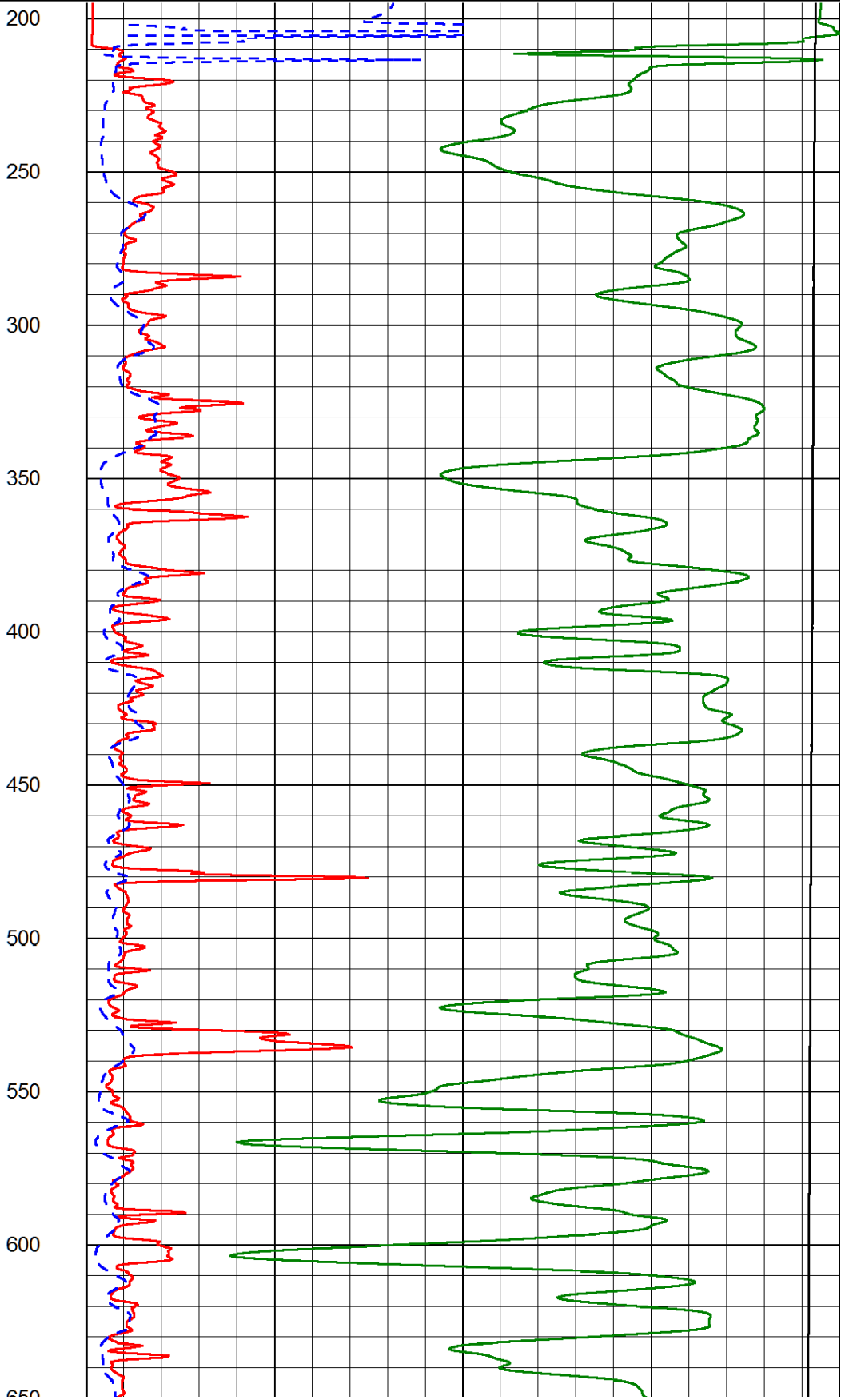
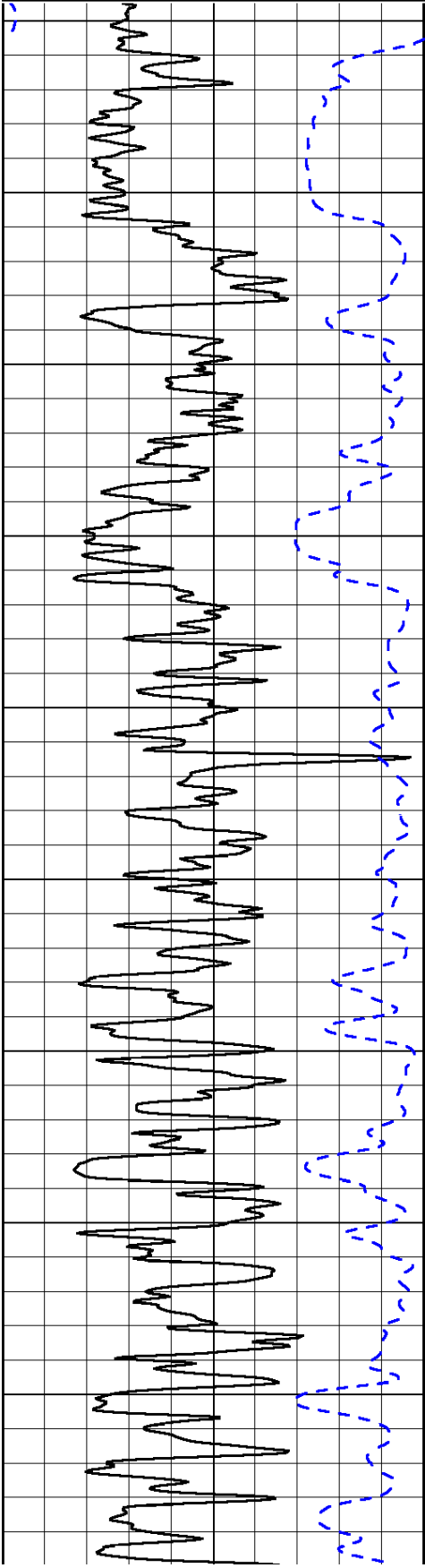
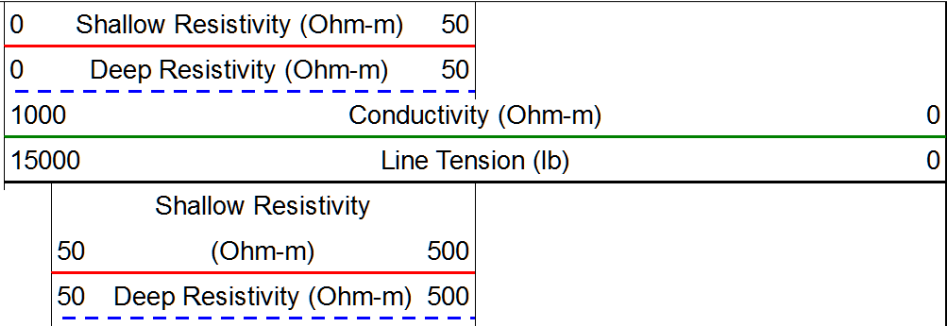
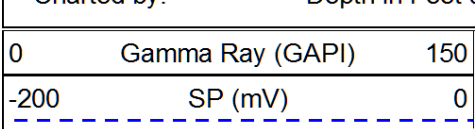
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

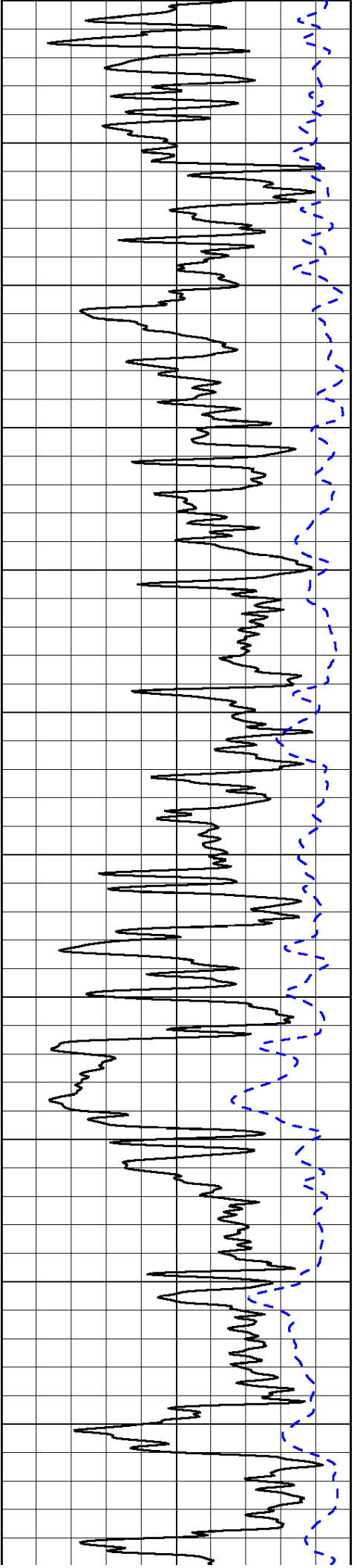
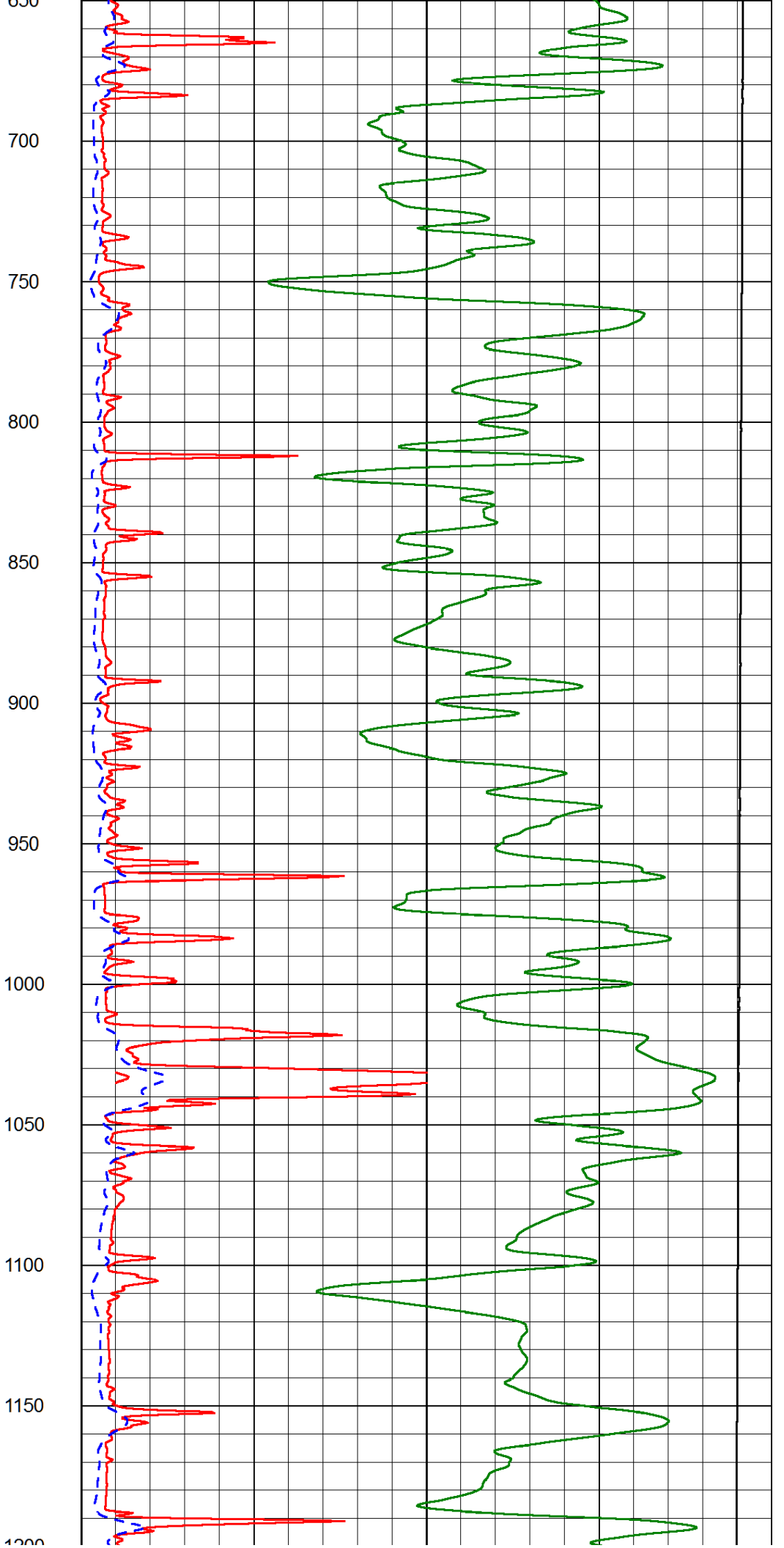
Comments

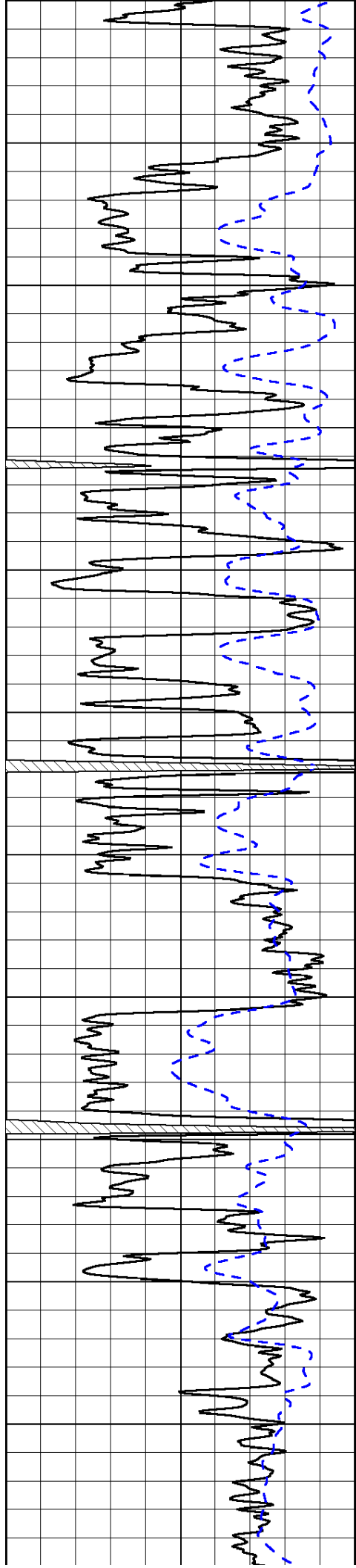
Thank you for using Log-Tech, Inc.
(785) 625-3858

Salina Kansas
South to Hesston Exit, East to K15 HWY, 2 South to NE 60 Rd, East to Walton Ks,
10.2 East to Quail Rd, 1 South, 1 1/2 East, South Into

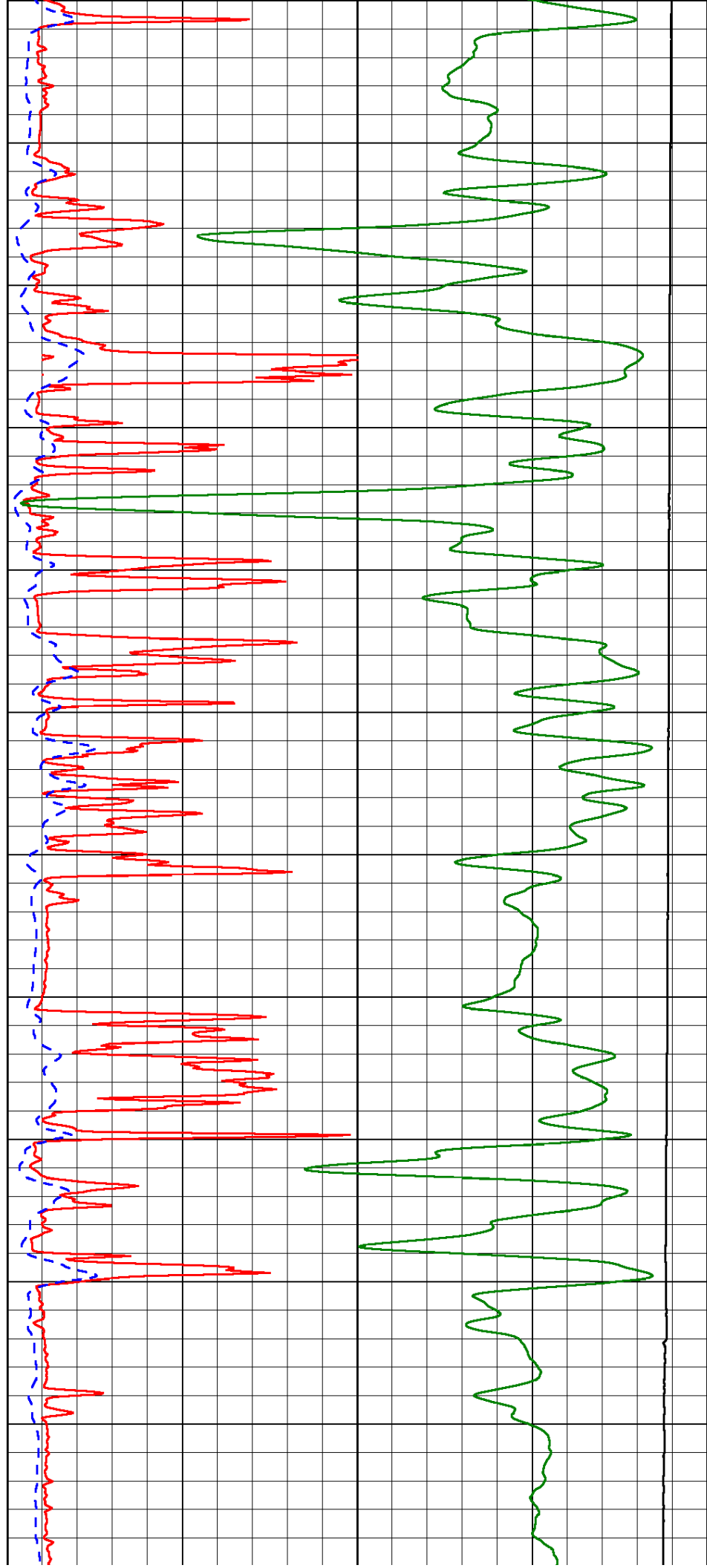
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Dataset Creation: Sat Jan 18 17:55:18 2014
Charted by: Depth in Feet scaled 1:600

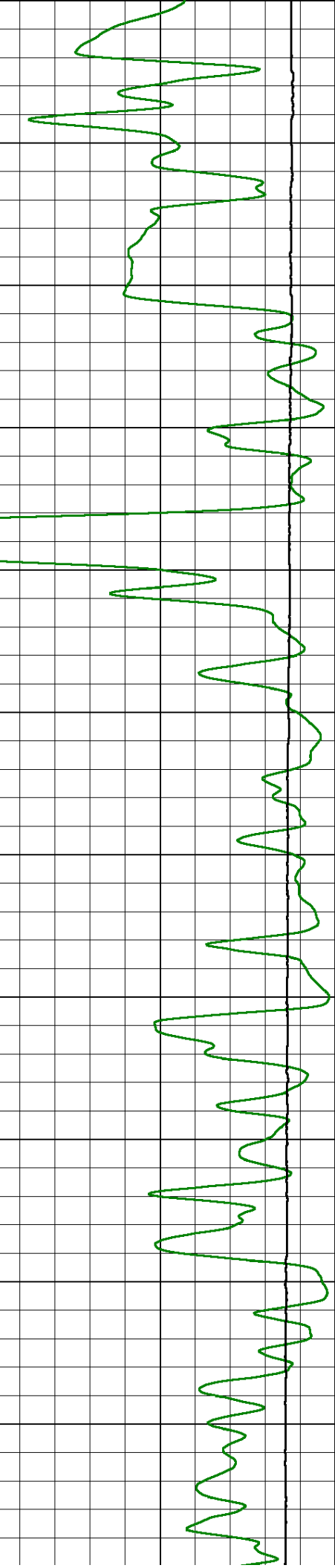
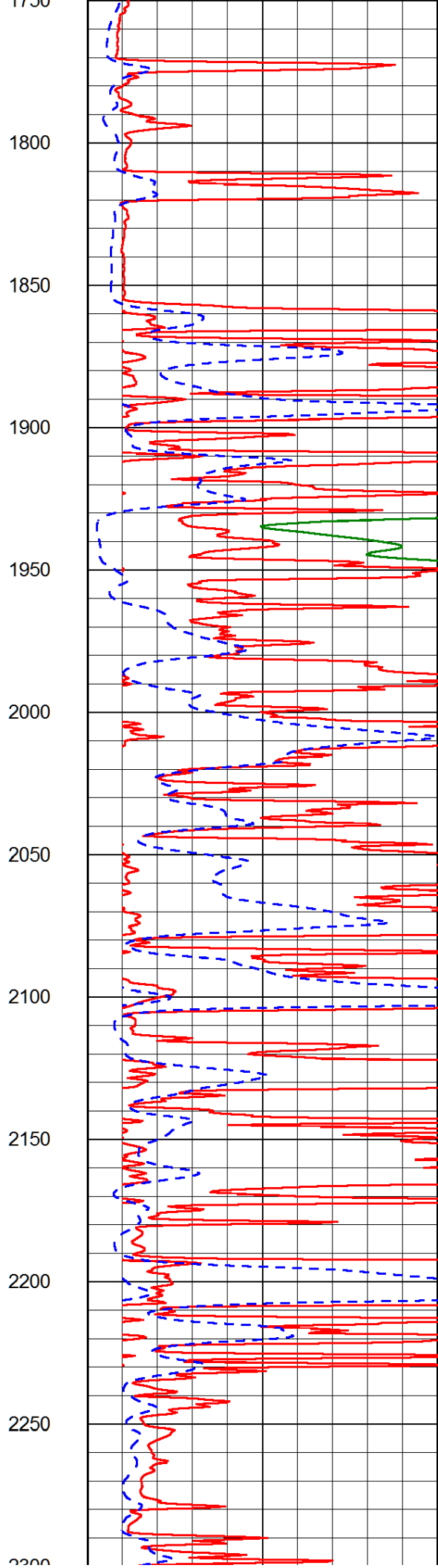
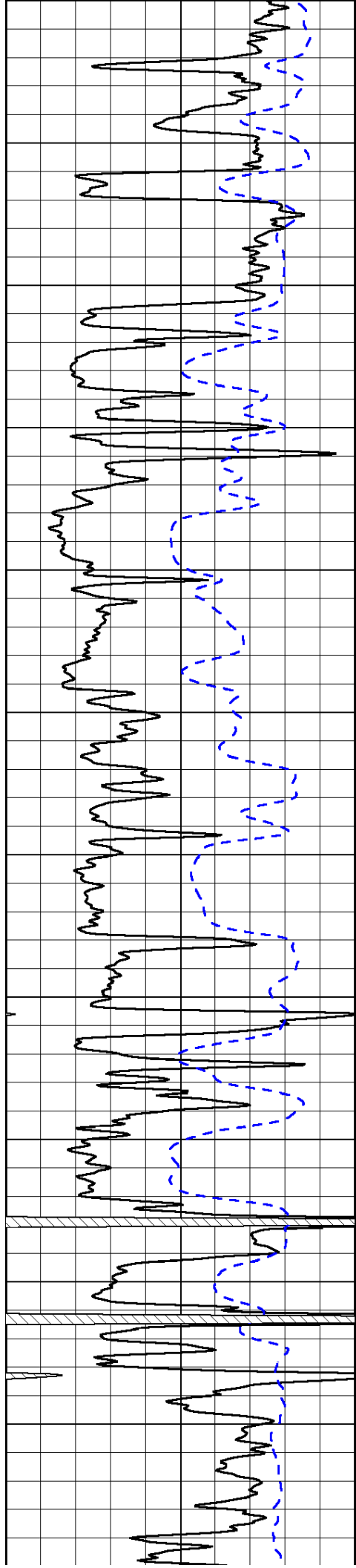


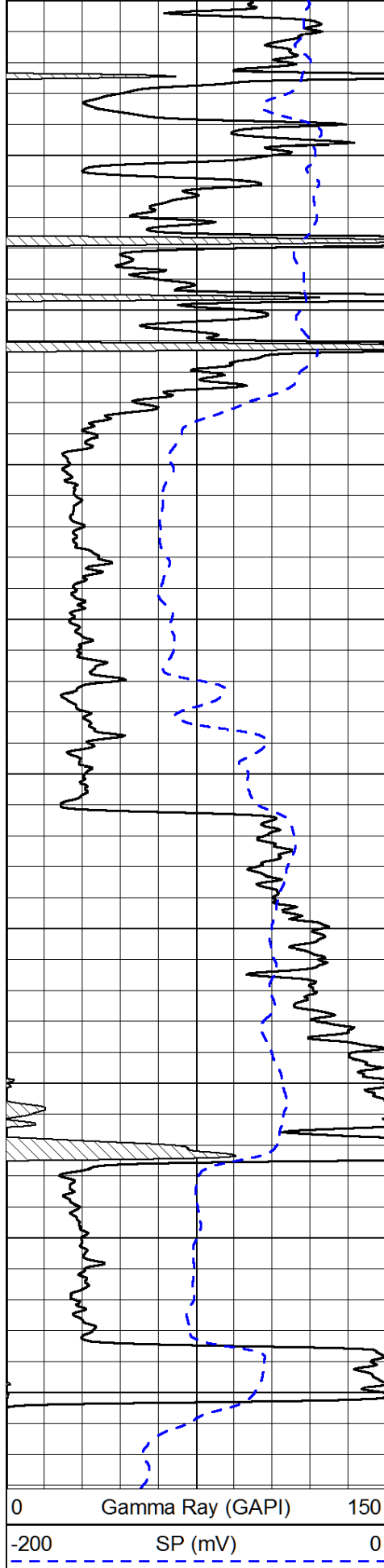




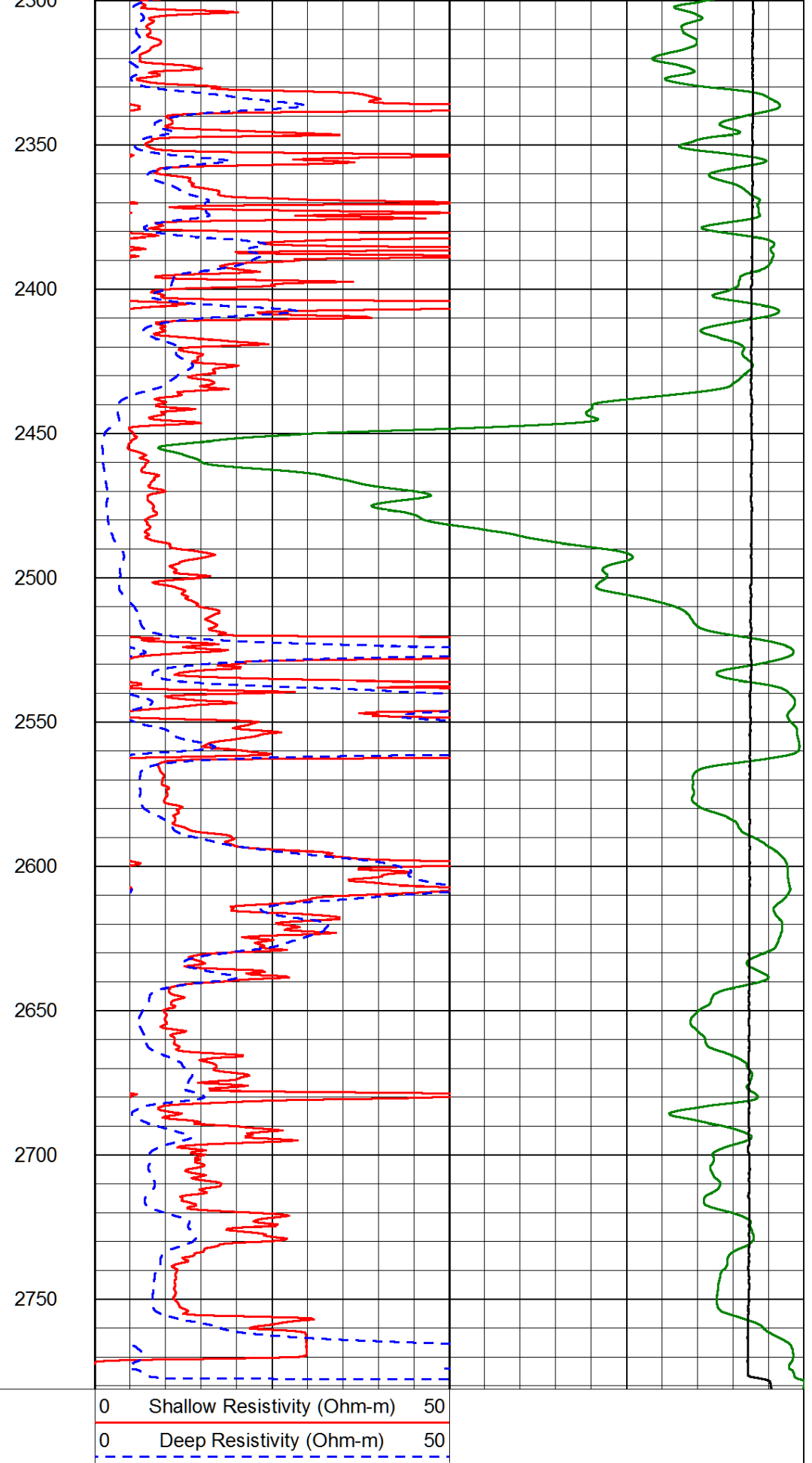
1200
1250
1300
1350
1400
1450
1500
1550
1600
1650
1700
1750







0 Gamma Ray (GAPI) 150
-200 SP (mV) 0



0 Shallow Resistivity (Ohm-m) 50
0 Deep Resistivity (Ohm-m) 50
1000 Conductivity (Ohm-m) 15000
0 Line Tension (lb) 500

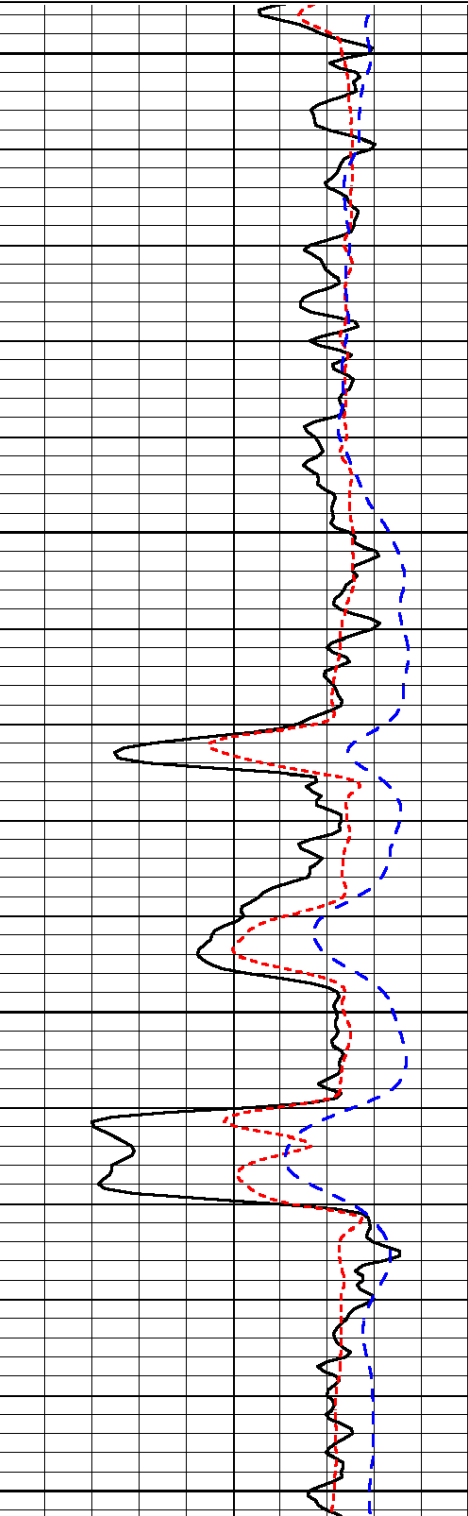
Shallow Resistivity
(Ohm-m)

Database File: k_bar_hawk_15hd.db
Dataset Pathname: DIL/kbarstk
Presentation Format: dil
Dataset Creation: Sat Jan 18 17:55:18 2014
Charted by: Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
-160	RXO/RT	40
-200	SP (mV)	0

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	Shallow Resistivity (Ohm-m)	2000
10000	Line Tension (lb)	0

LSPD
(ft/min)

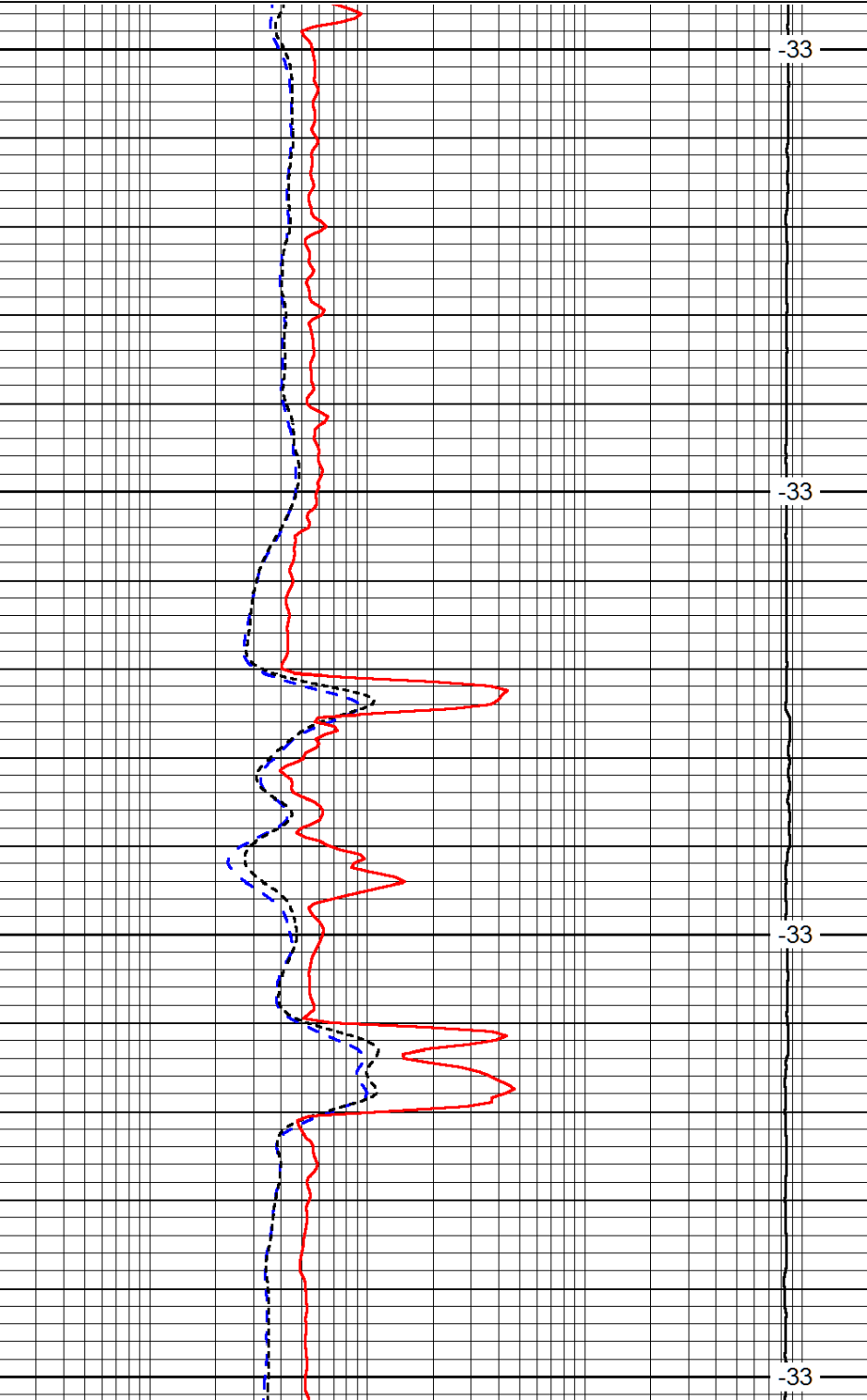


1700

1750

1800

1850

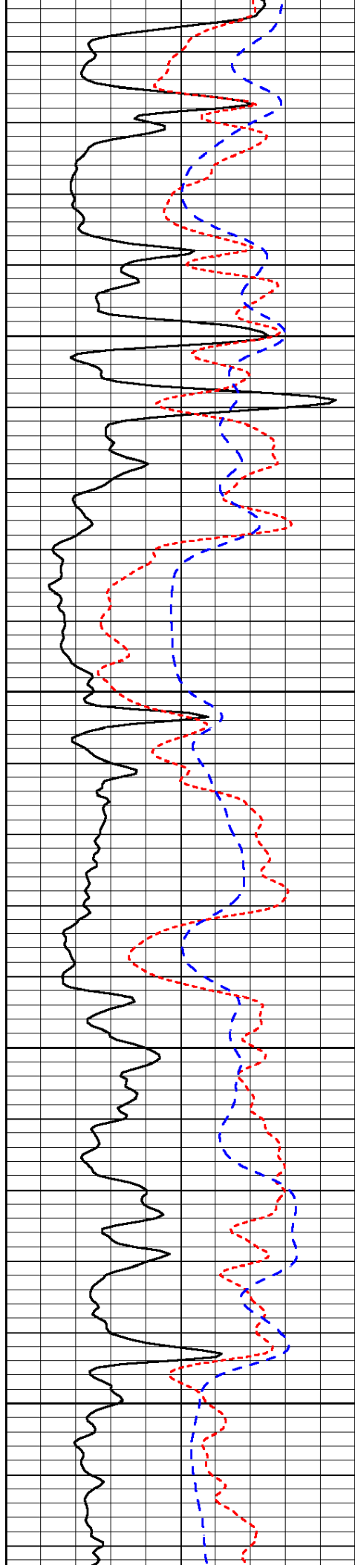


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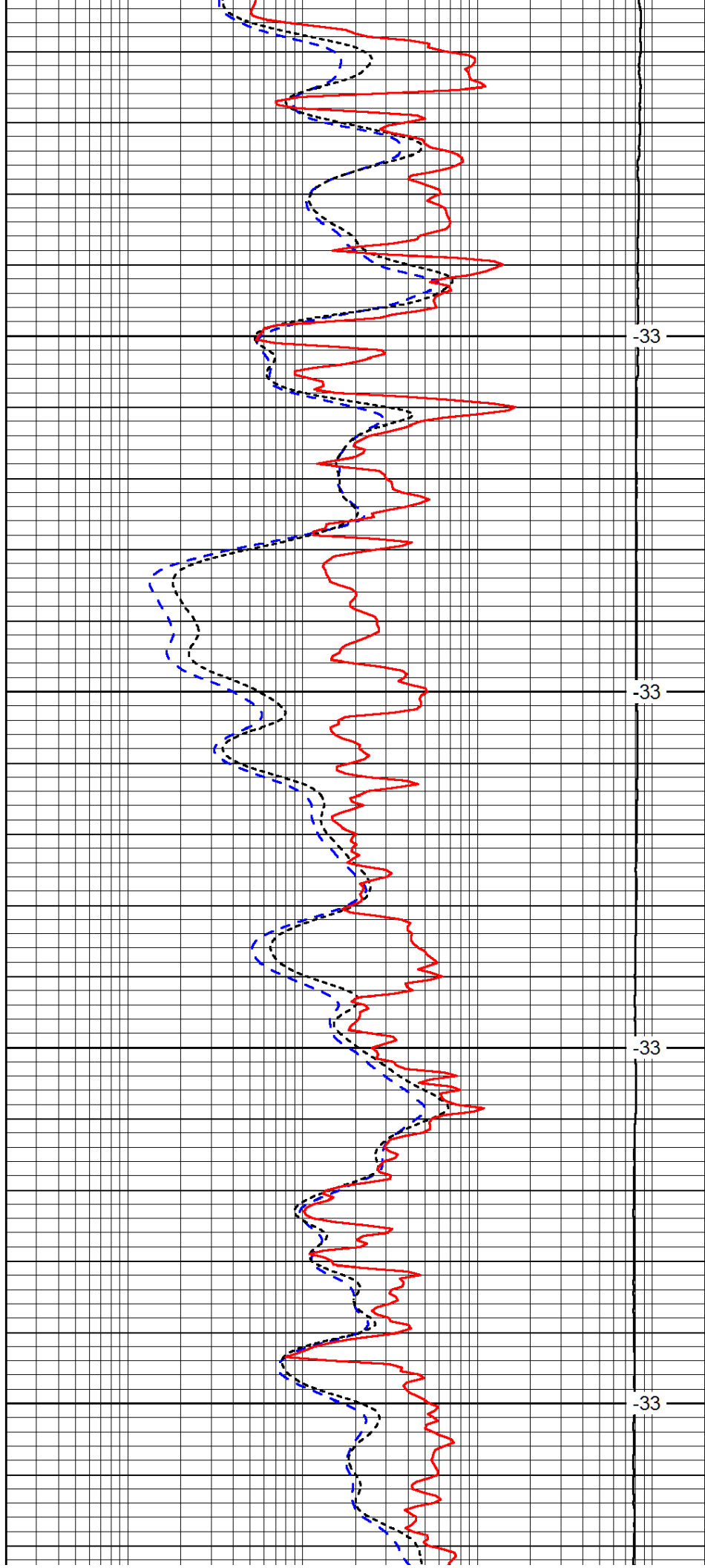


1900

1950

2000

2050

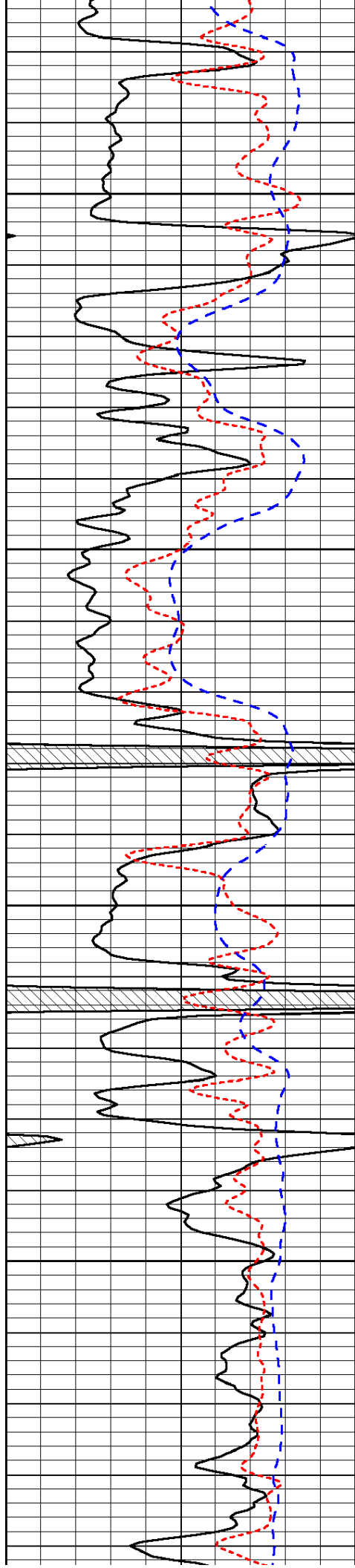


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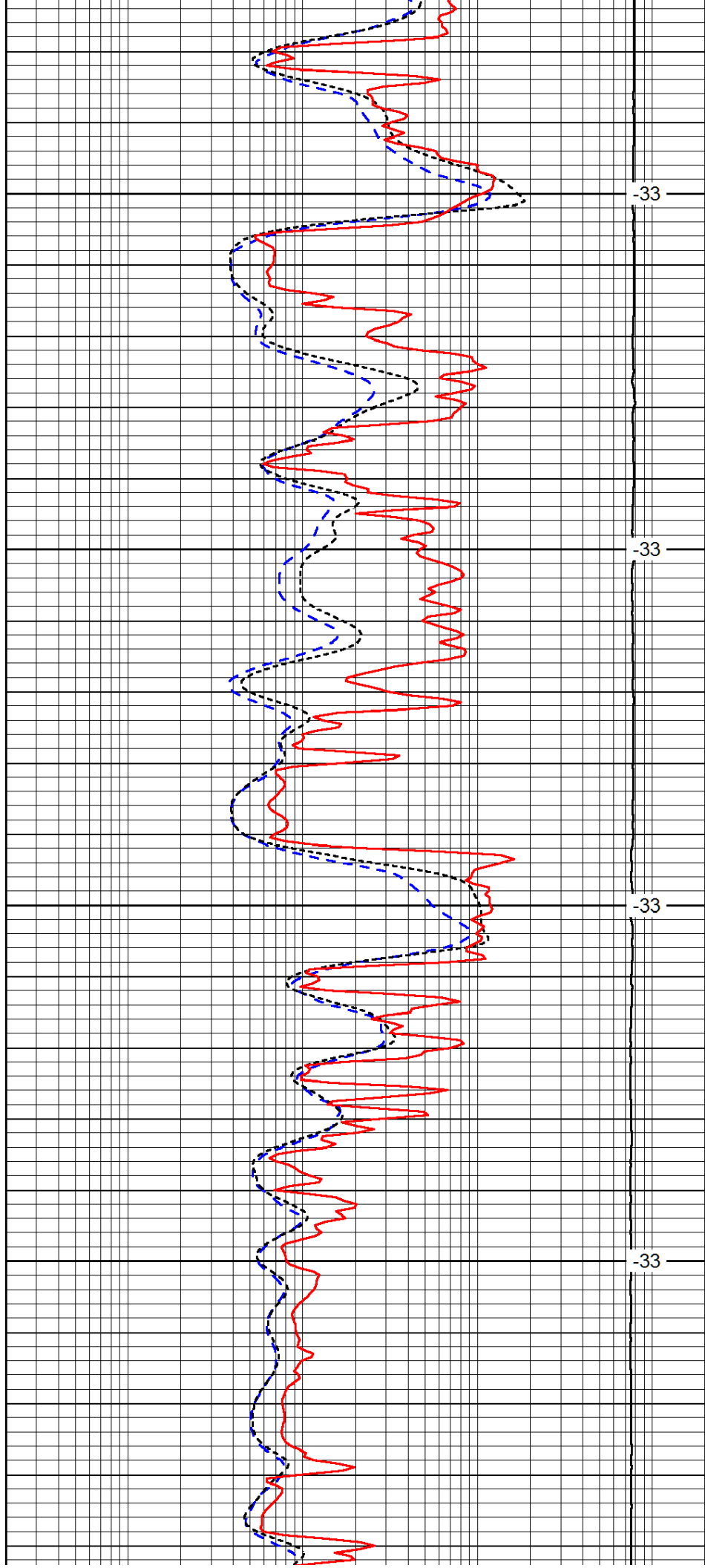


2100

2150

2200

2250

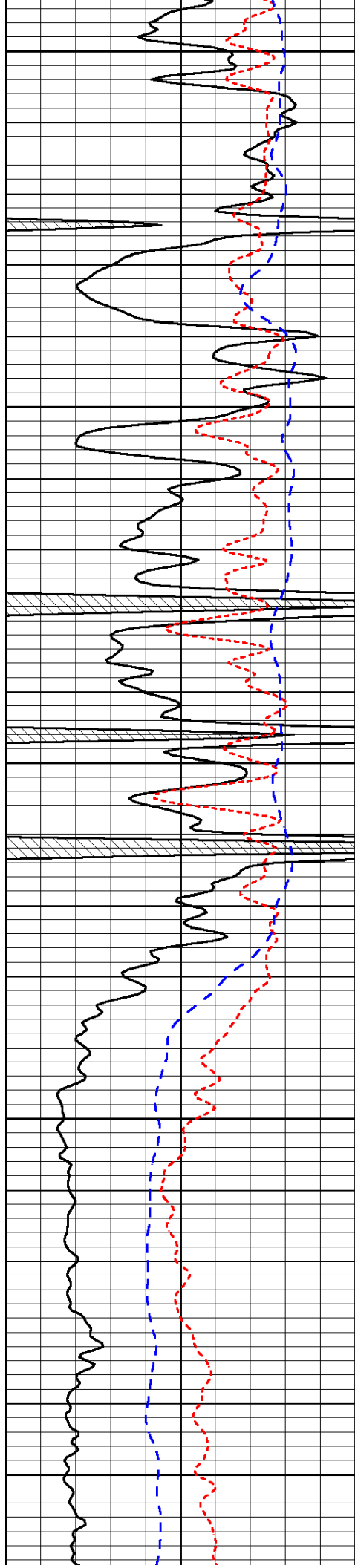


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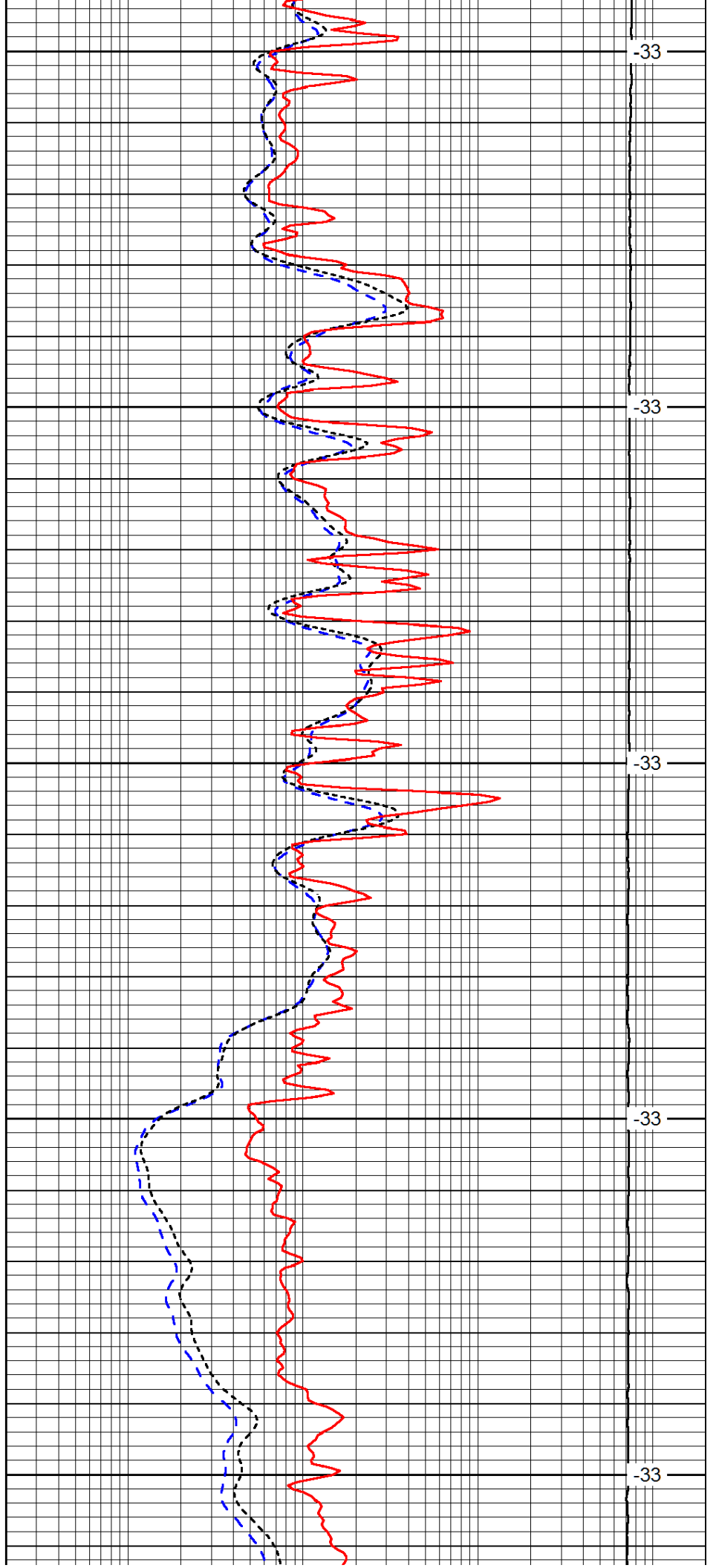
2300

2350

2400

2450

2500



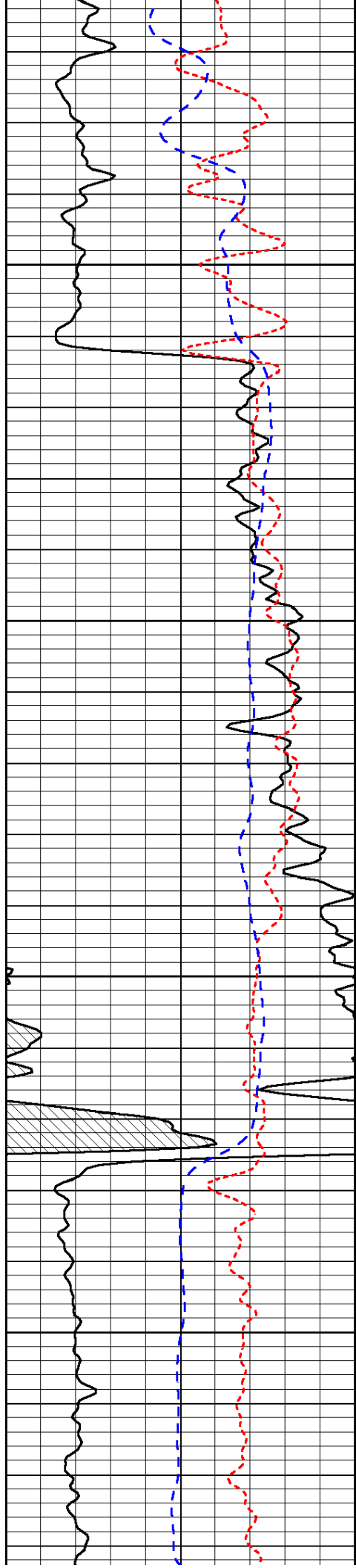
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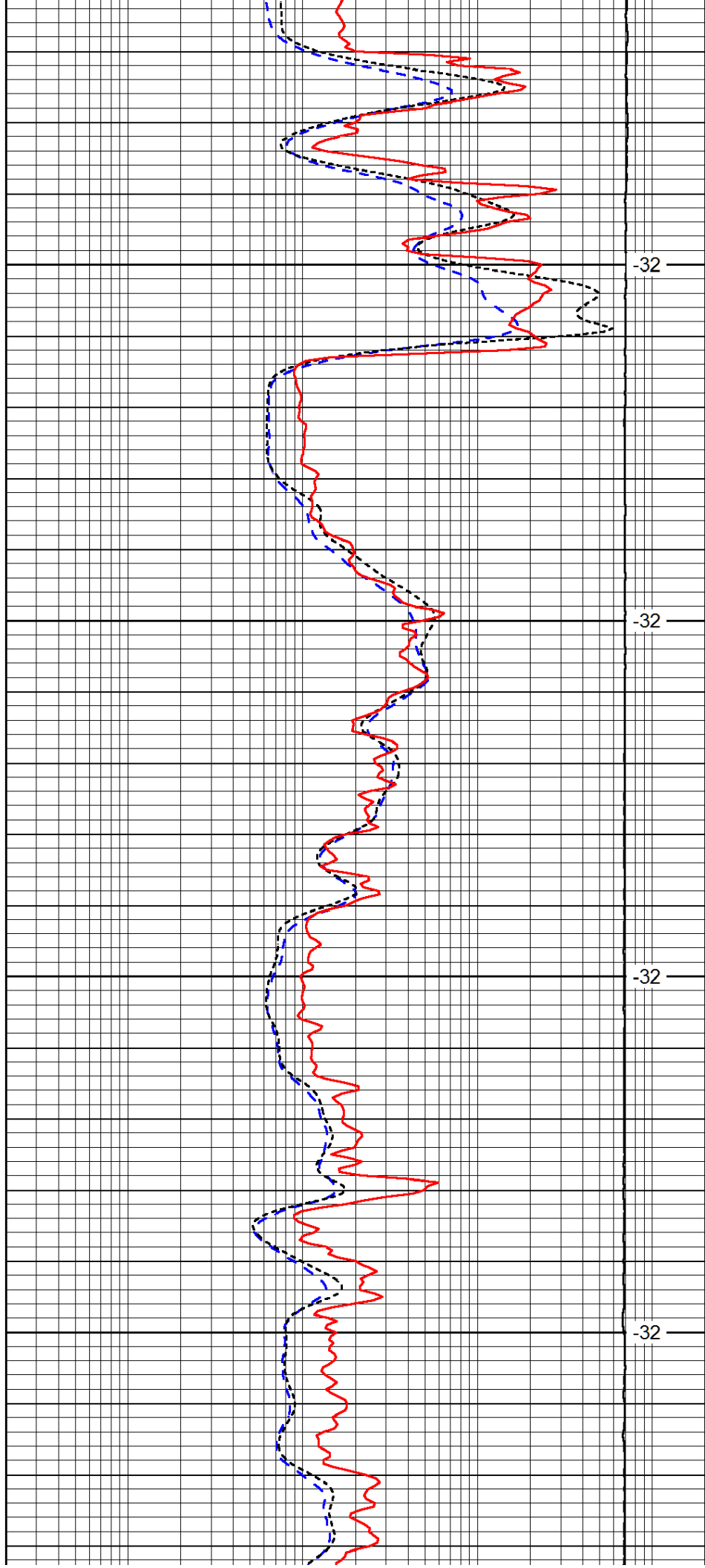


2550

2600

2650

2700

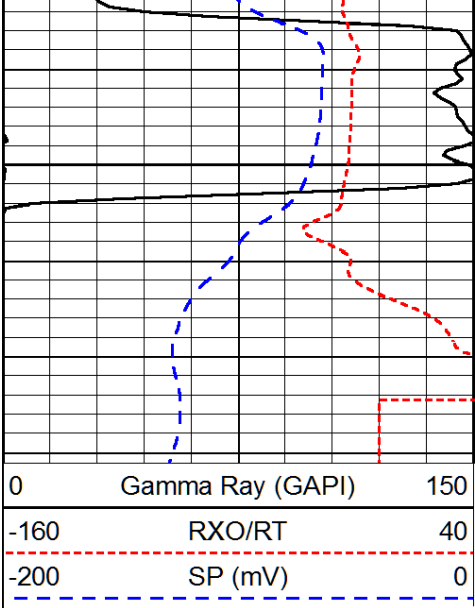


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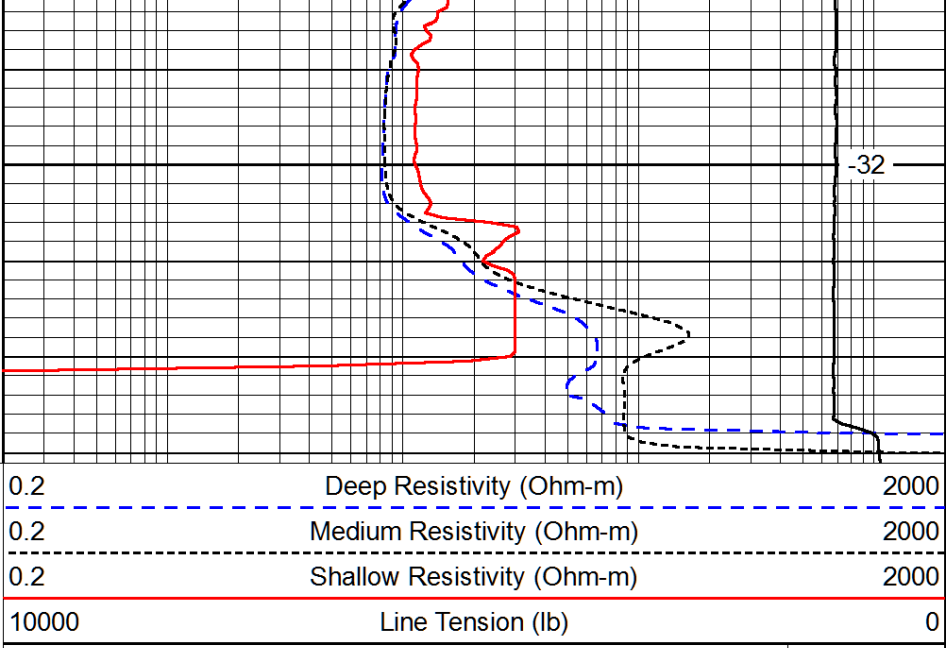
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-32



2750



-32

LSPD
(ft/min)