



Pioneer Energy Services

# Dual Induction Log

API No. 15-053-21304-00-00

Company: American Warrior, Inc.  
 Well: Grubb D #1-5  
 Field: Stoltenberg  
 County: Ellsworth State: Kansas

Location: 1698' FSL & 1644' FWL

Sec: 5 Twp: 16S Rge: 10W

Other Services: CNL/CDL MEL

Permanent Datum	Ground Level	Elevation 1785	K.B. 1793 D.F. 1785 G.L. 1785
Log Measured From	Kelly Bushing	8 Ft. Above Perm. Datum	
Drilling Measured From	Kelly Bushing		
Date	1/27/2014		
Run Number	One		
Depth Driller	3400		
Depth Logger	3403		
Bottom Logged Interval	3402		
Top Log Interval	350		
Casing Driller	8.625 @ 364		
Casing Logger	360		
Bit Size	7.875		
Type Fluid in Hole	Chemical		
Salinity, ppm CL	4500		
Density / Viscosity	9.4   67		
pH / Fluid Loss	11.0   7.2		
Source of Sample	Flowline		
Rm @ Meas. Temp	0.89 @ 35		
Rmf @ Meas. Temp	0.67 @ 35		
Rmc @ Meas. Temp	1.20 @ 35		
Source of Rmf / Rmc	Charts		
Rm @ BHT	0.28 @ 112		
Operating Rig Time	3 Hours		
Max Rec. Temp. F	112		
Equipment Number	91		
Location	Hays		
Recorded By	D. Schmidt		
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.

### Comments

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

Wilson,  
 10 South, 1.3 East to TB,  
 North and West into

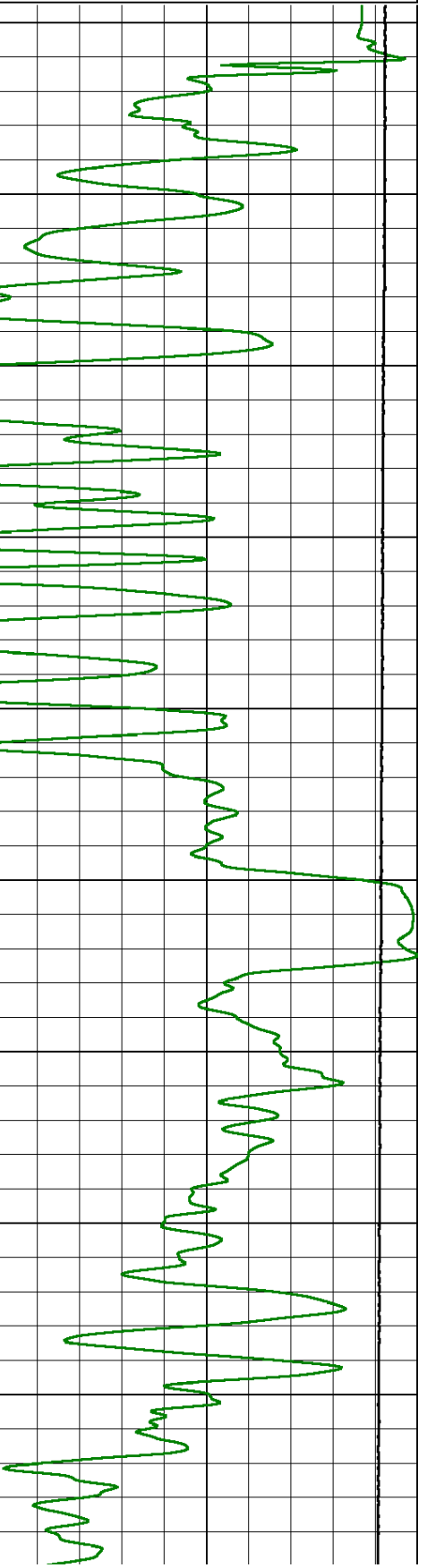
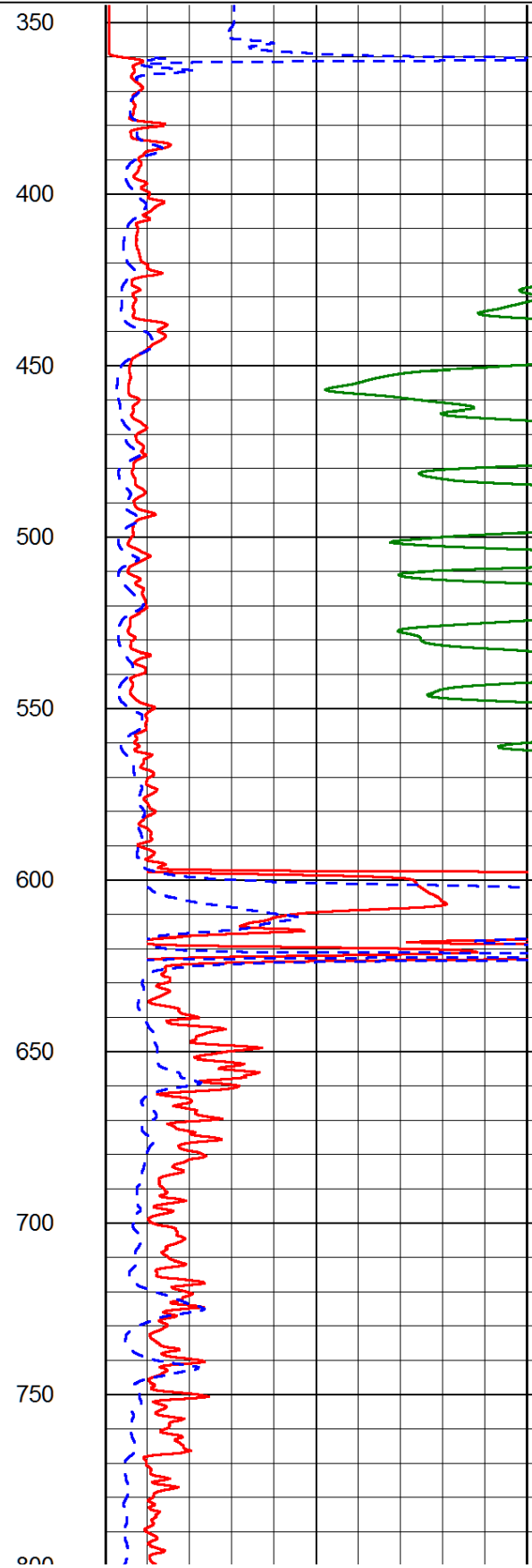
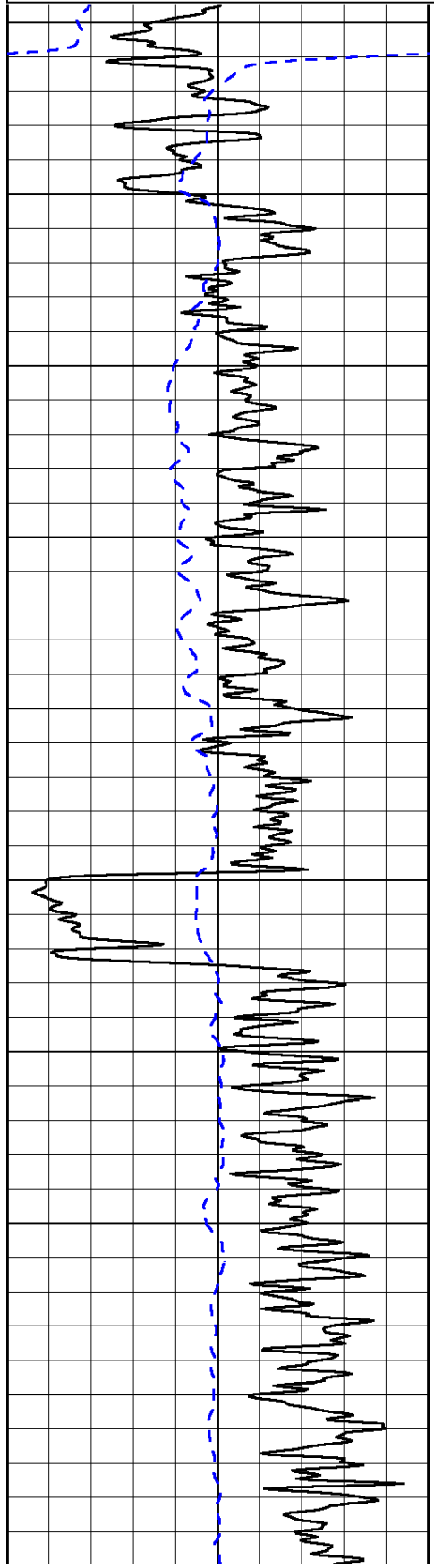
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 Presentation Format: dil2in  
 Dataset Creation: Mon Jan 27 08:26:13 2014  
 Charted by: Depth in Feet scaled 1:600

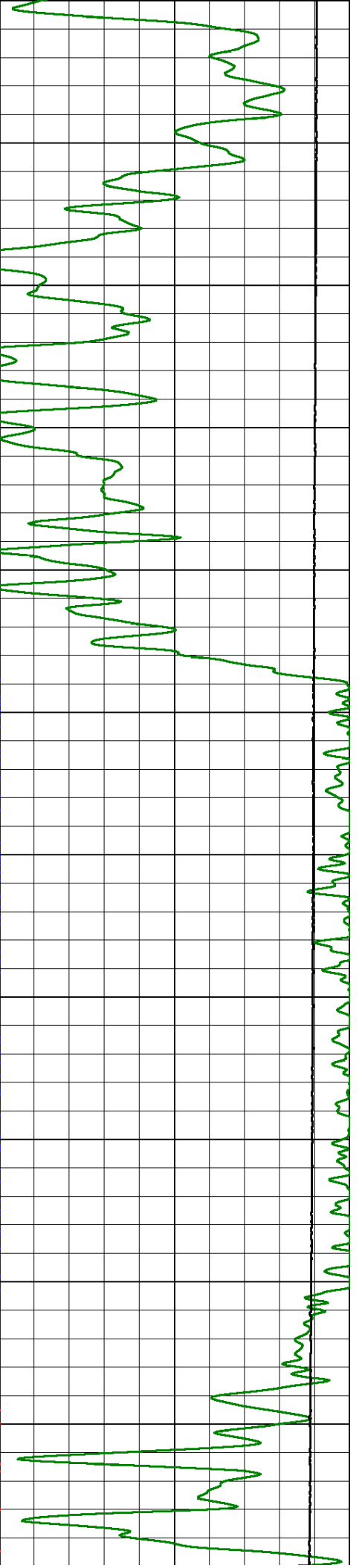
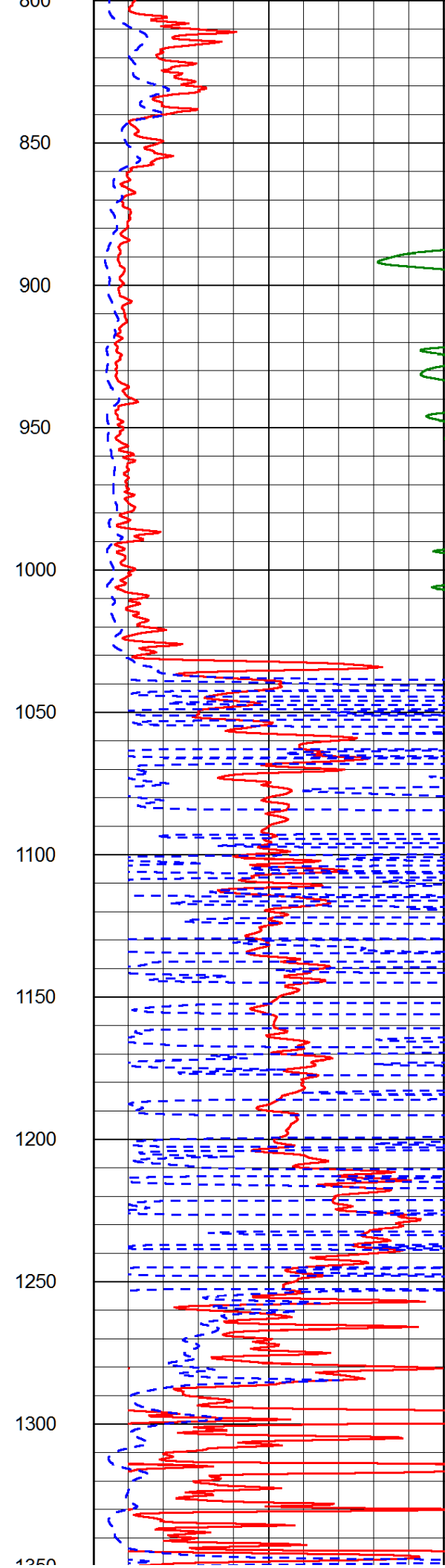
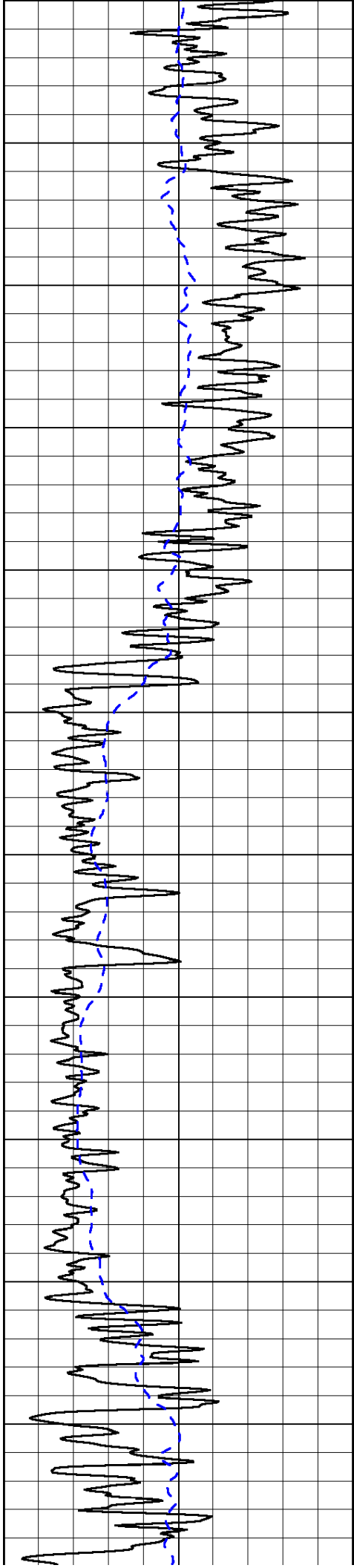
0	Gamma Ray (GAPI)	150
-200	SP (mV)	0

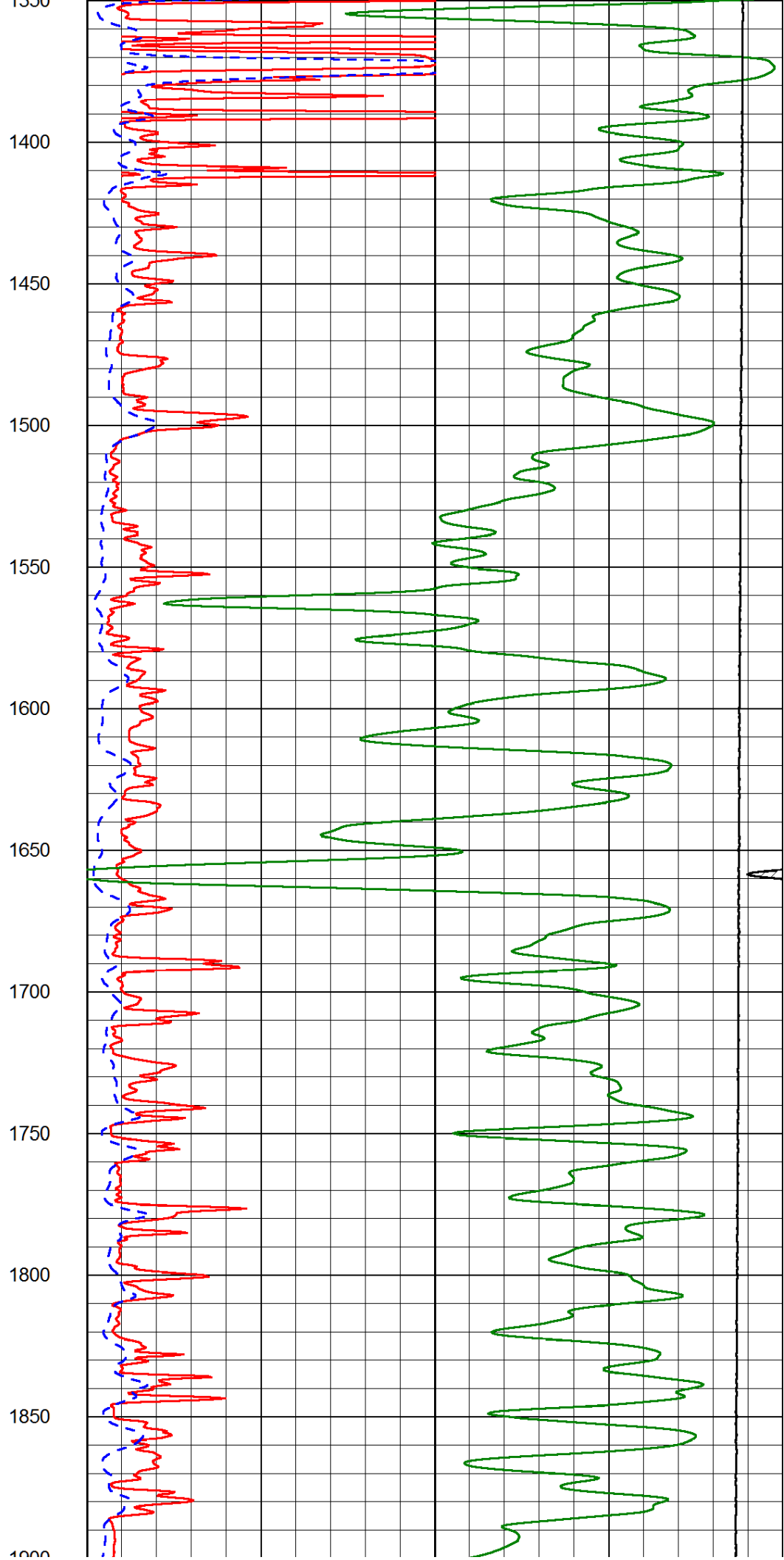
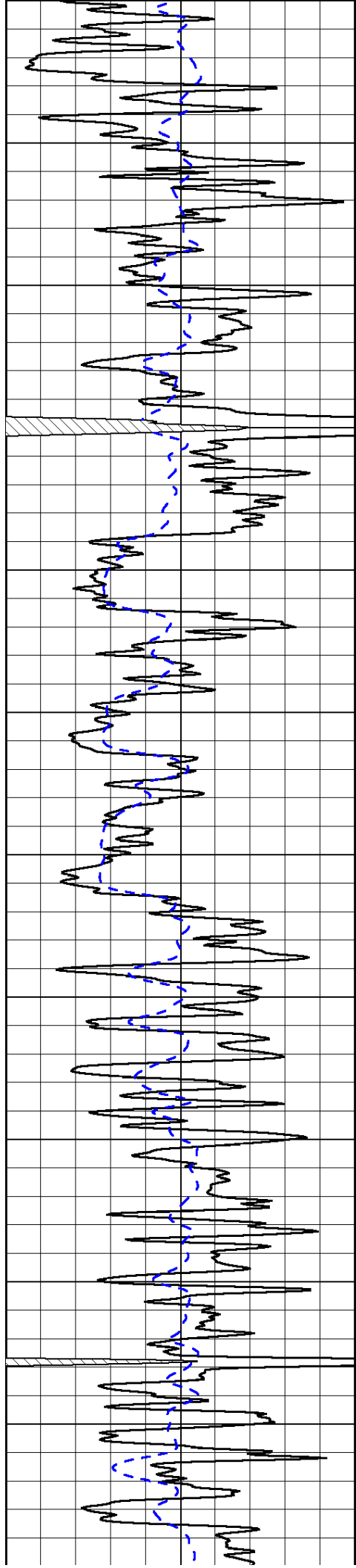
0	Shallow Resistivity (Ohm-m)	50
0	Deep Resistivity (Ohm-m)	50

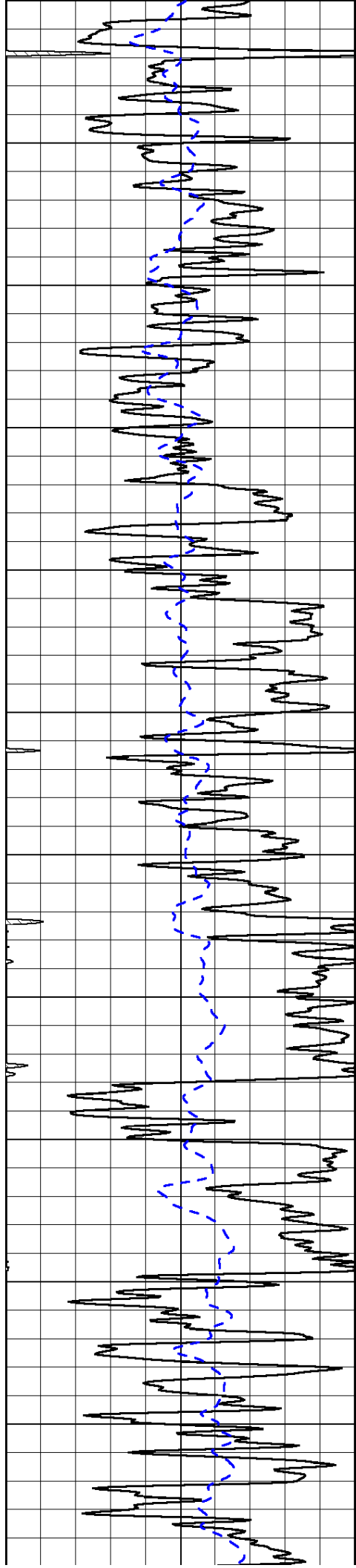
1000	Conductivity (Ohm-m)	0
15000	Line Tension (lb)	0

Shallow Resistivity		
50	(Ohm-m)	500
50	Deep Resistivity (Ohm-m)	500

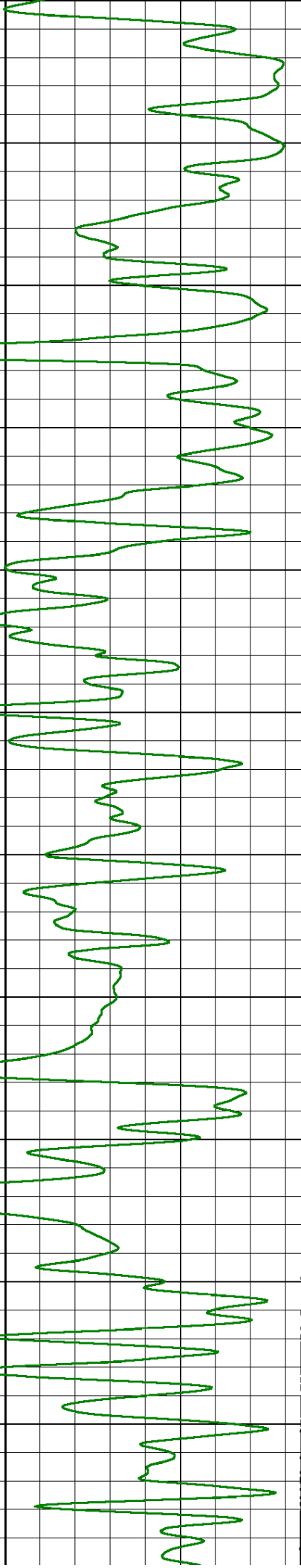
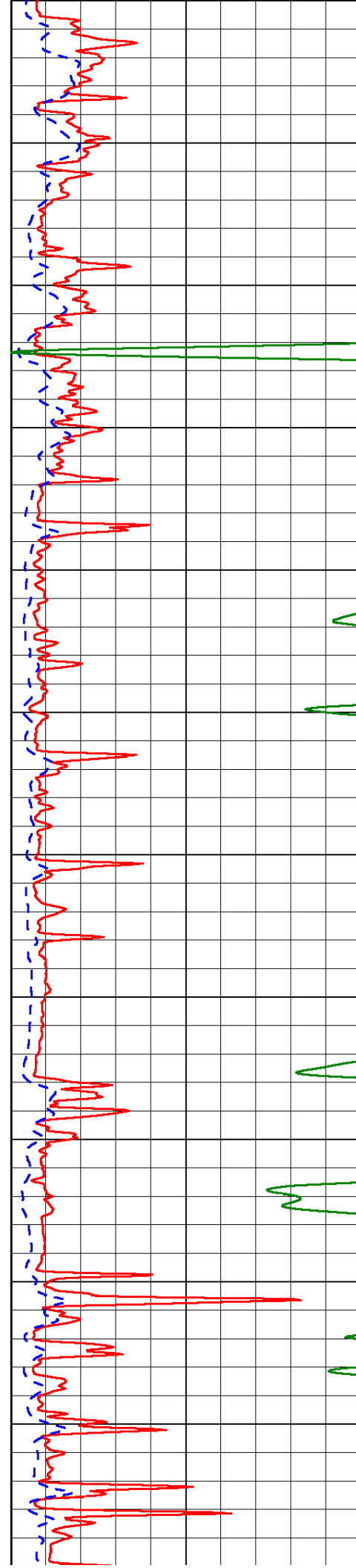


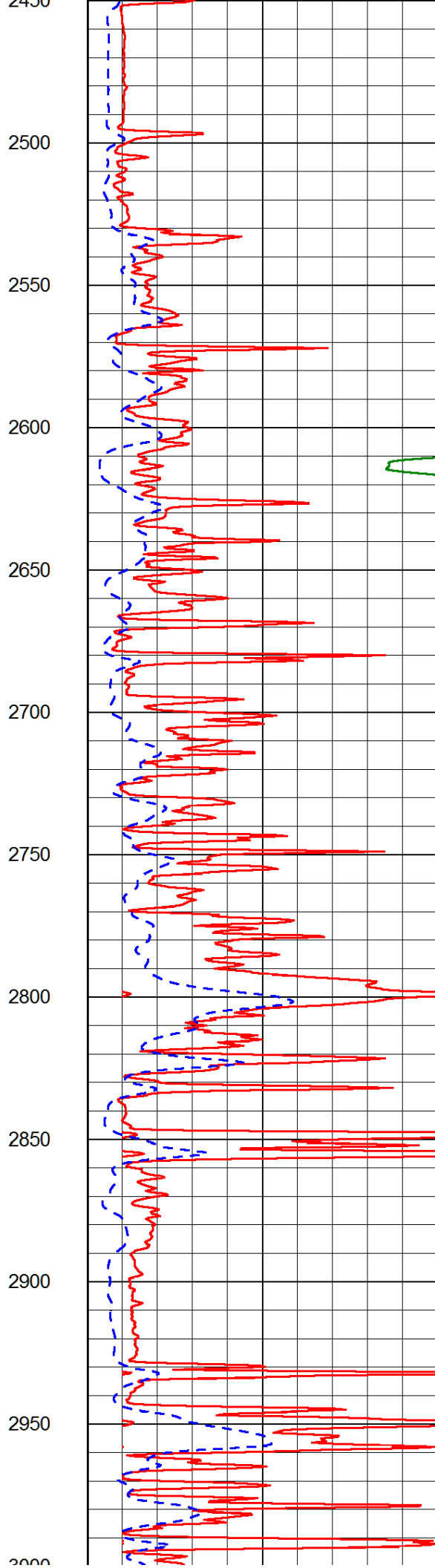
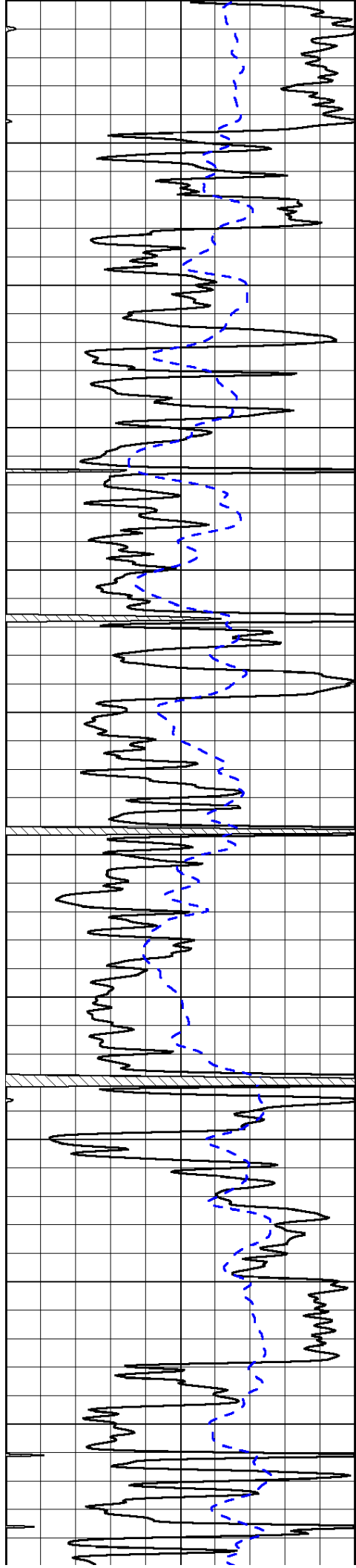


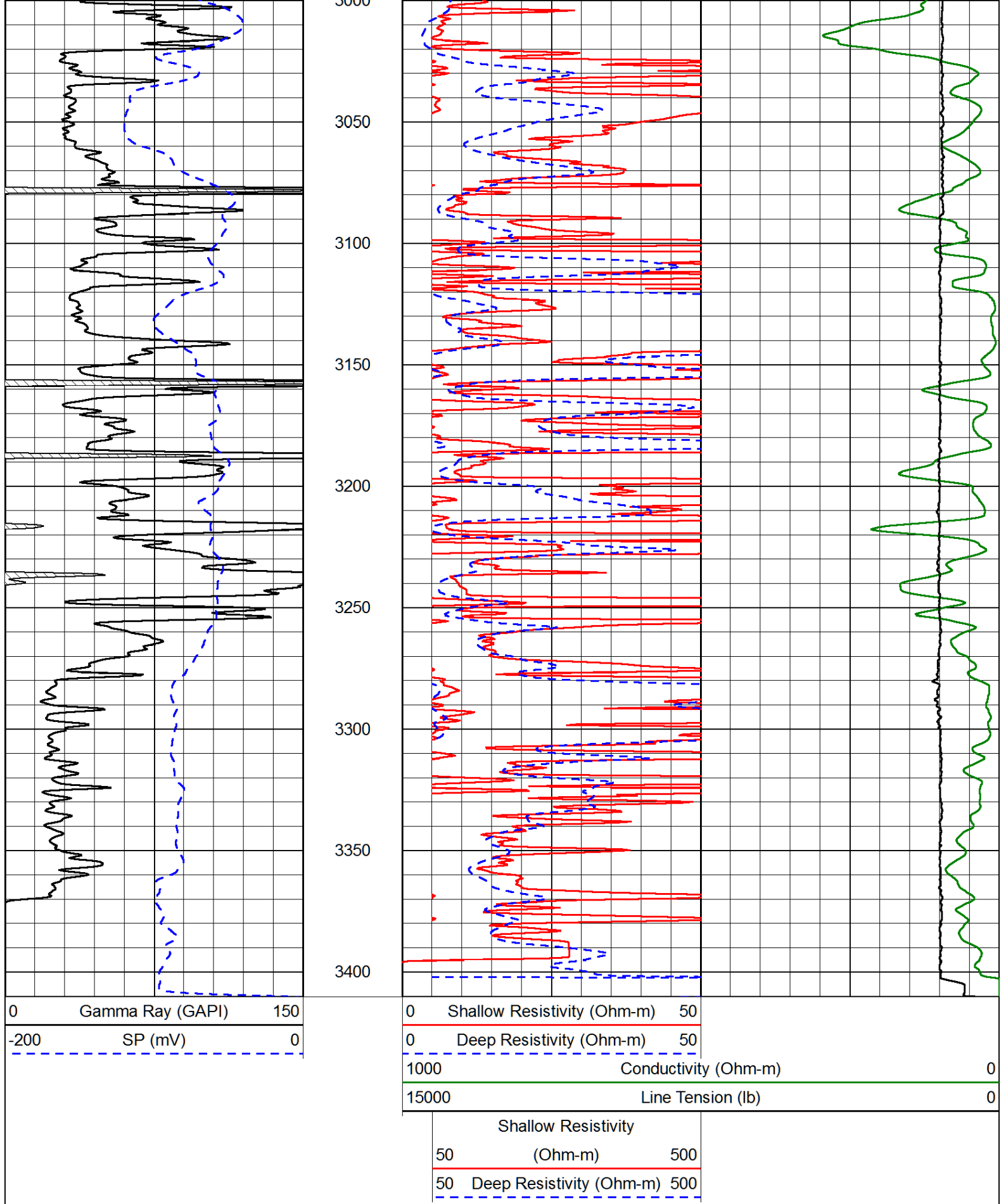




1900  
1950  
2000  
2050  
2100  
2150  
2200  
2250  
2300  
2350  
2400  
2450





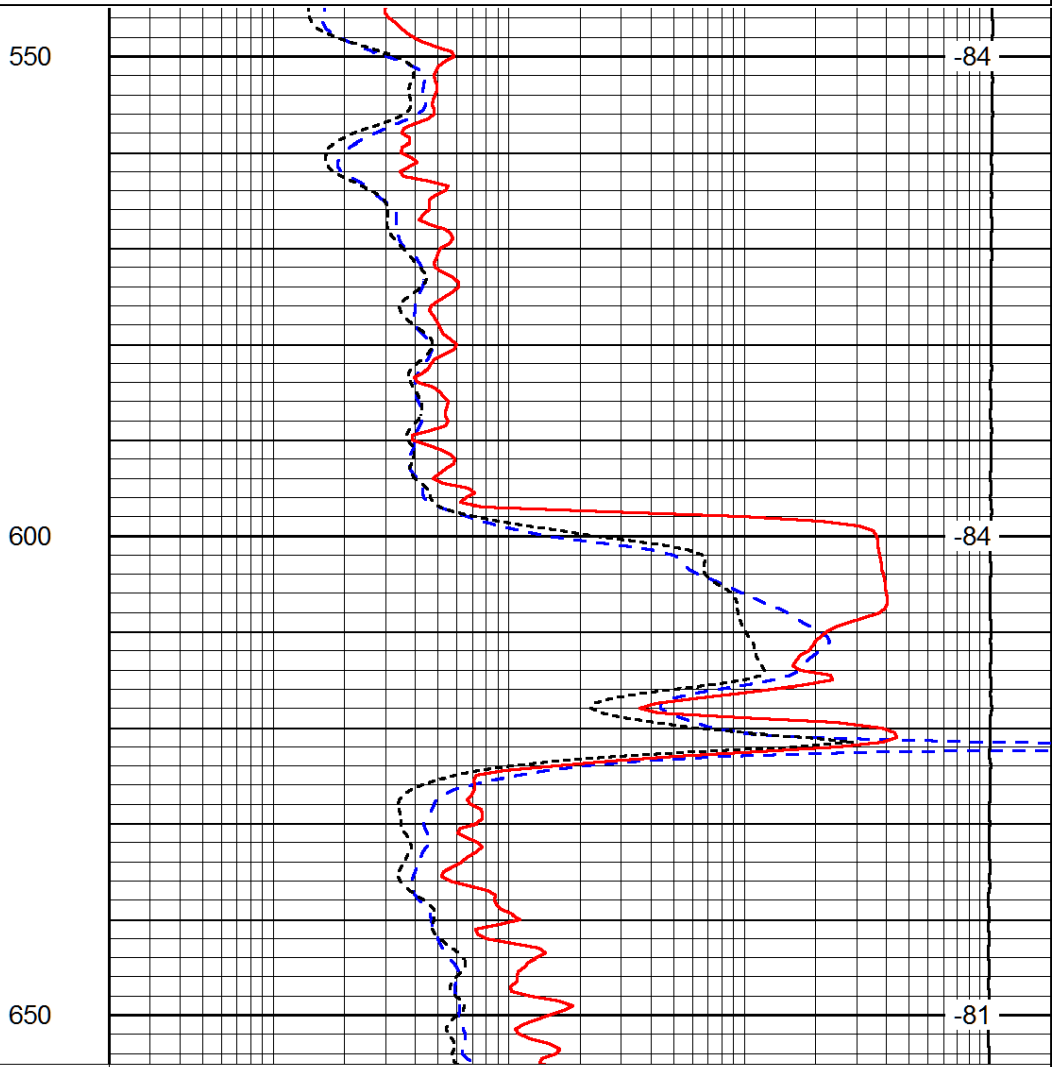
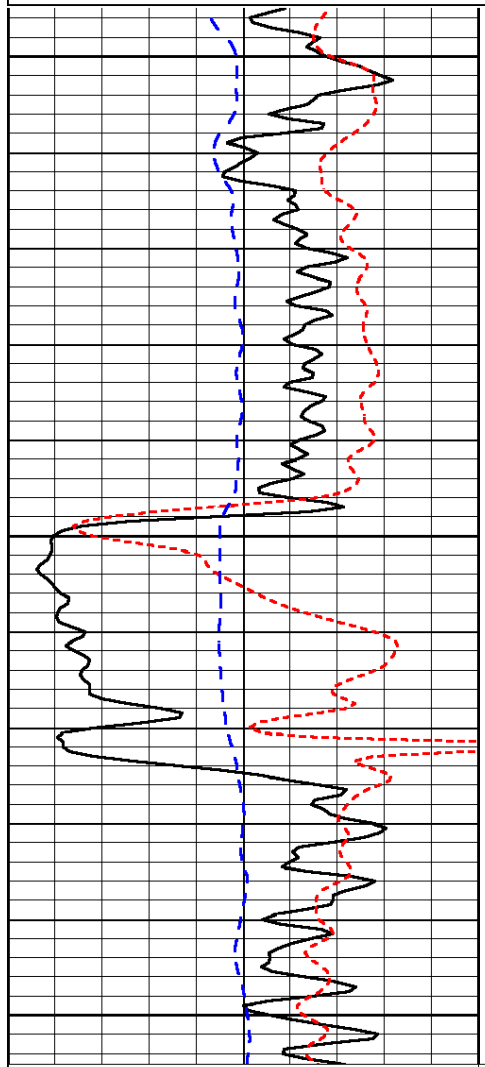


Database File: amwar\_012714hd.db  
 Dataset Pathname: dil/awstck  
 Presentation Format: dil  
 Dataset Creation: Mon Jan 27 08:26:13 2014  
 Charted by: Depth in Feet scaled 1:240

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)



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-200	SP (mV)	0

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LSPD  
(ft/min)

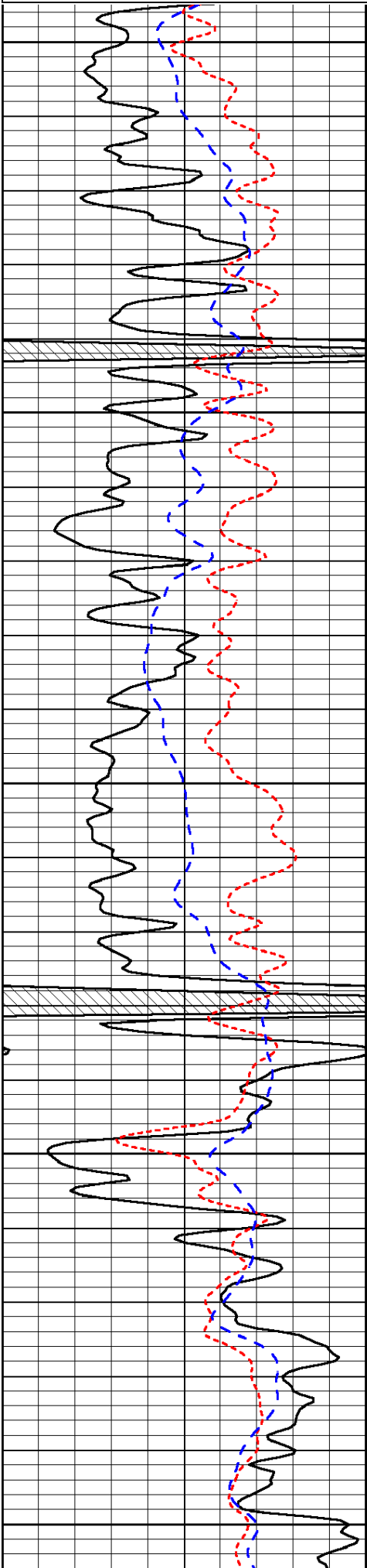
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10000	Line Tension (lb)	0

LSPD  
(ft/min)

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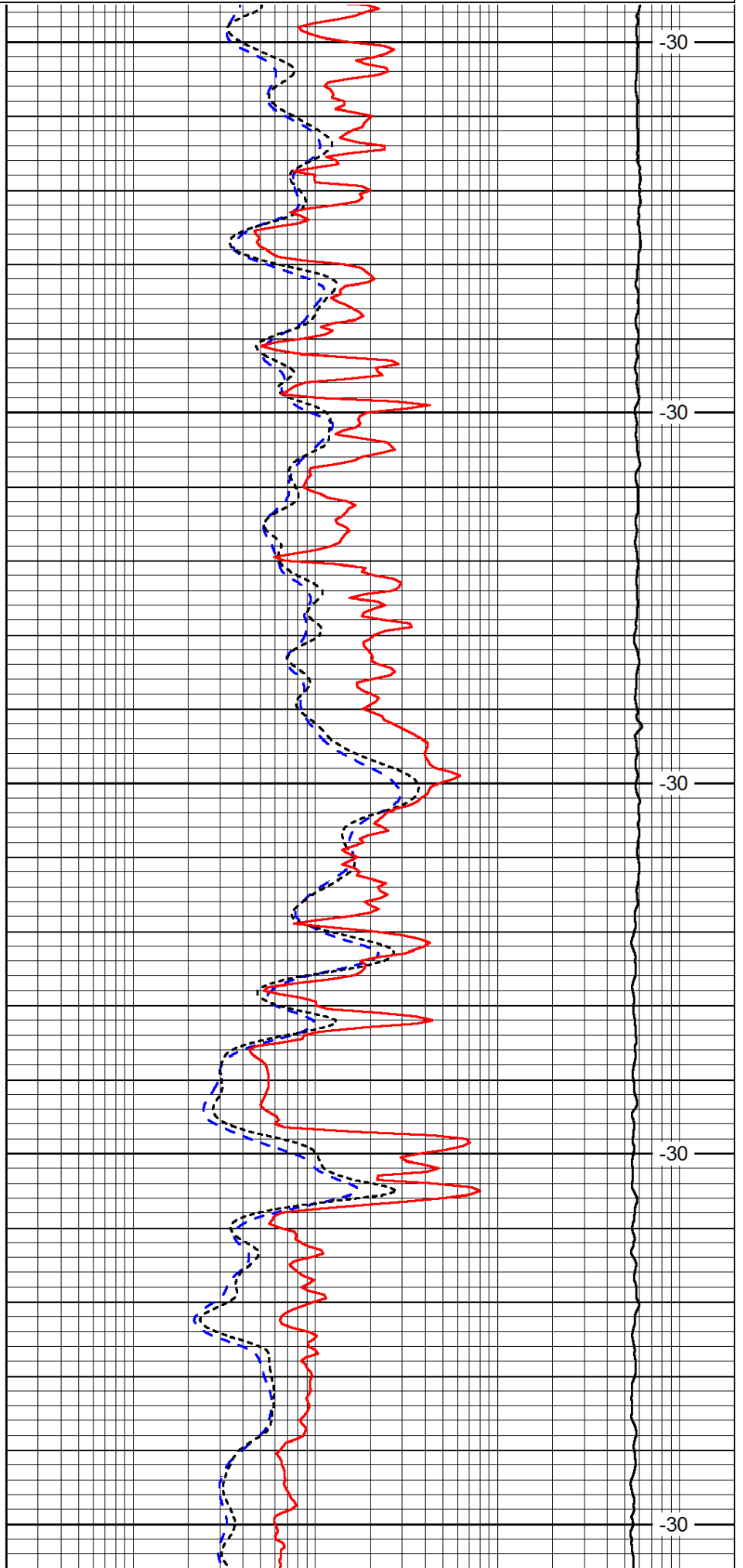
2700

2750

2800

2850

2900



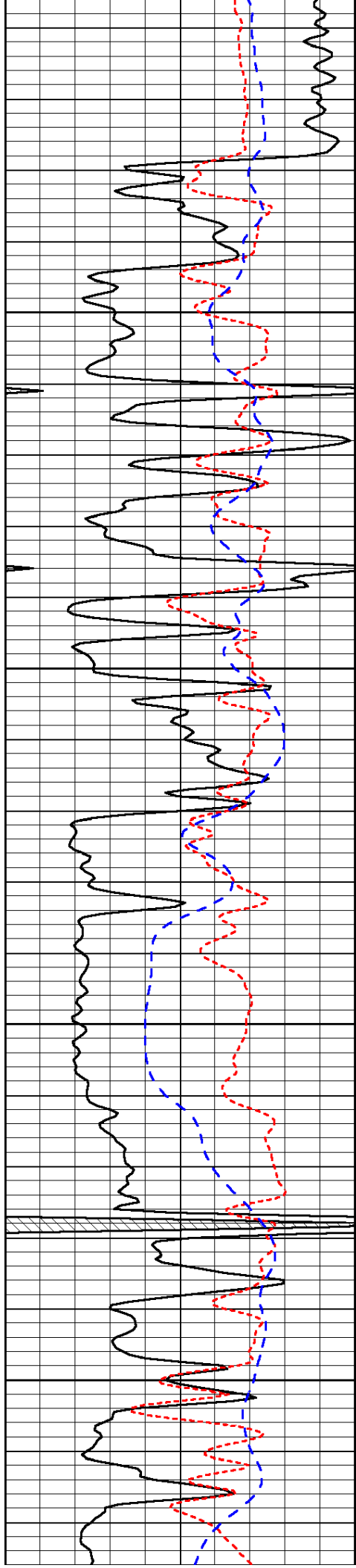
-30

-30

-30

-30

-30

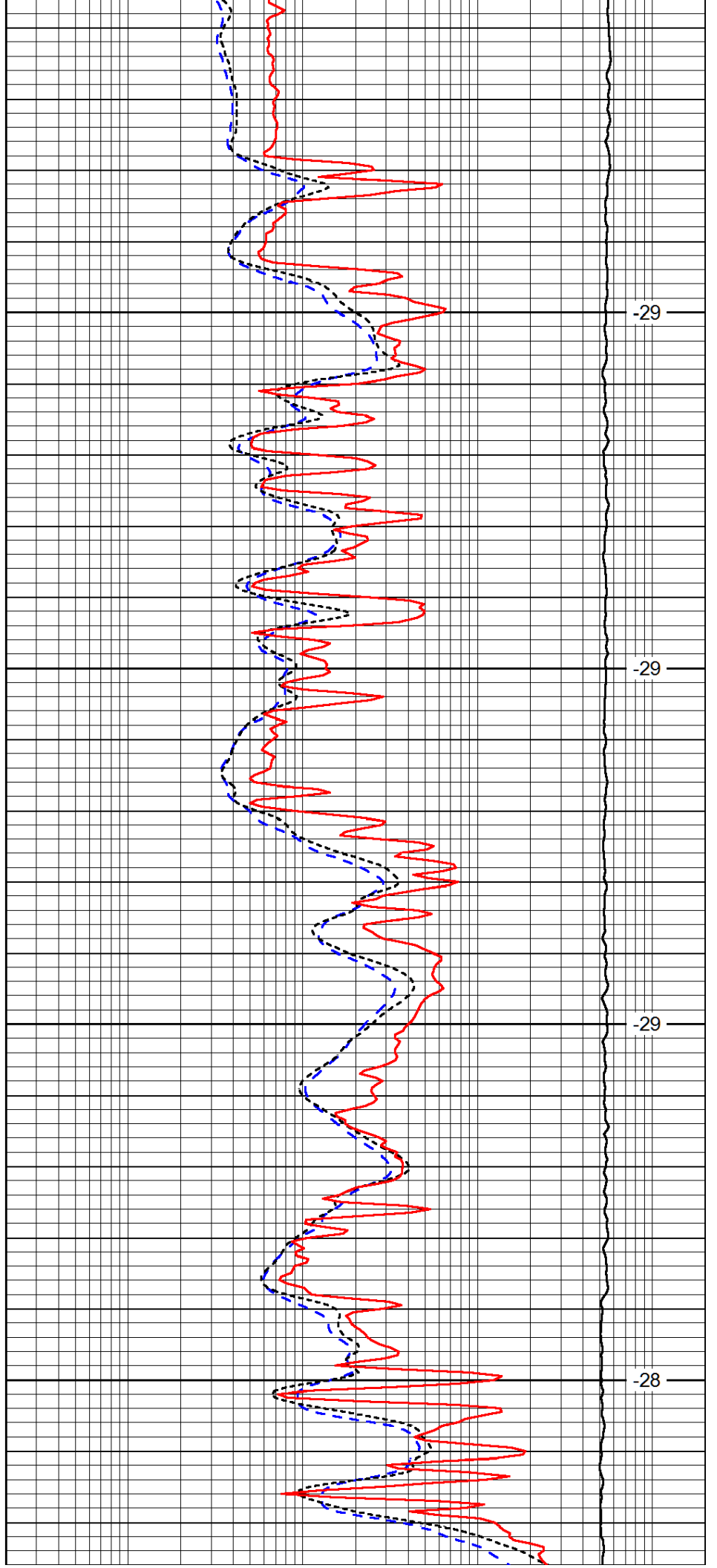


2950

3000

3050

3100

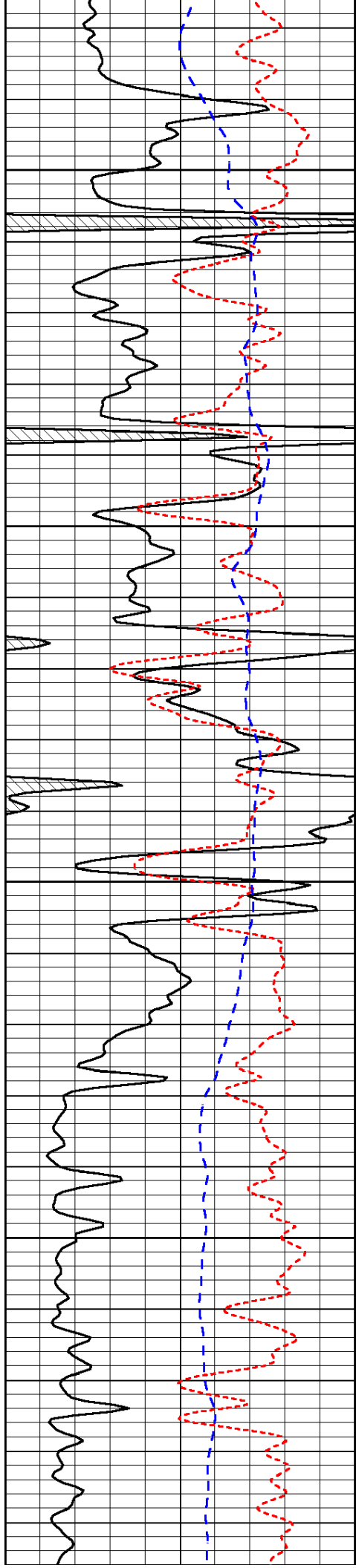


-29

-29

-29

-28

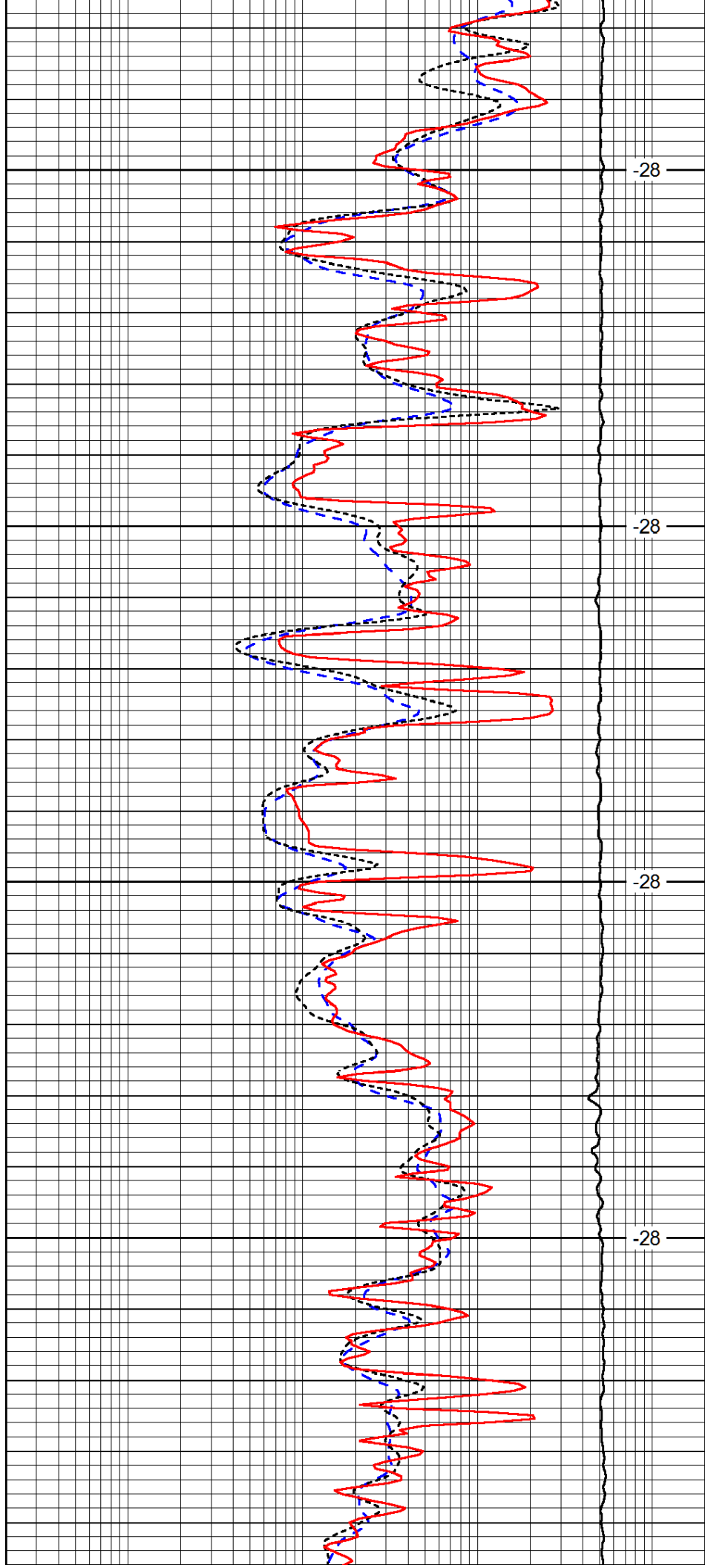


3150

3200

3250

3300

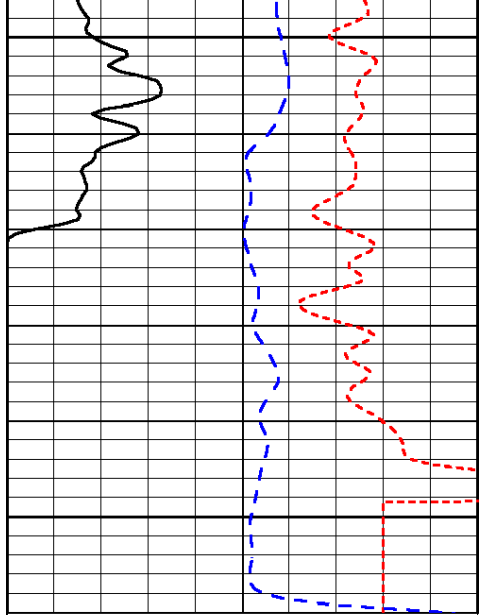


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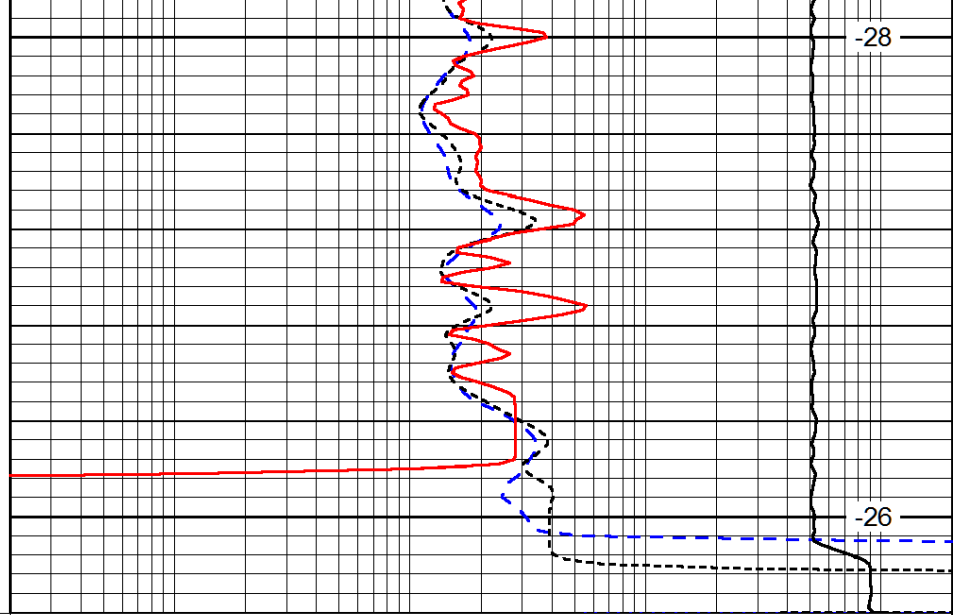
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3350

3400

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



-28

-26

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)