



Pioneer Energy Services

Dual Induction Log

API No.	15-145-21,697-00-00	
Company	H&D Exploration, LLC.	
Well	Roth A No. 1	
Field	Pawnee Rock	
County	Pawnee	State
		Kansas
Location	SW/NW/NE SW 2297' FSL & 1434' FWL	
Sec: 35	Twp: 20 S	Rge: 16 W
Permanent Datum	Ground Level	Elevation 2003
Log Measured From	Kelly Bushing	7 Ft. Above Perm. Datum
Drilling Measured From	Kelly Bushing	K.B. 2010 D.F. G.L. 2003

Date	11/8/2012
Run Number	One
Depth Driller	3840
Depth Logger	3838
Bottom Logged Interval	3837
Top Log Interval	950
Casing Driller	8.625 @ 995
Casing Logger	994
Bit Size	7.875
Type Fluid in Hole	Chemical
Salinity, ppm CL	6600
Density / Viscosity	9.5 55
pH / Fluid Loss	10.5 7.2
Source of Sample	Flowline
Rm @ Meas. Temp	.60 @ 68
Rmf @ Meas. Temp	.45 @ 68
Rmc @ Meas. Temp	.81 @ 68
Source of Rmf / Rmc	Charts
Rm @ BHT	.36 @ 114
Operating Rig Time	3 1/2 Hours
Max Rec. Temp. F	114
Equipment Number	15
Location	Hays
Recorded By	D.Kerr
Witnessed By	Kurt Talbott

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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

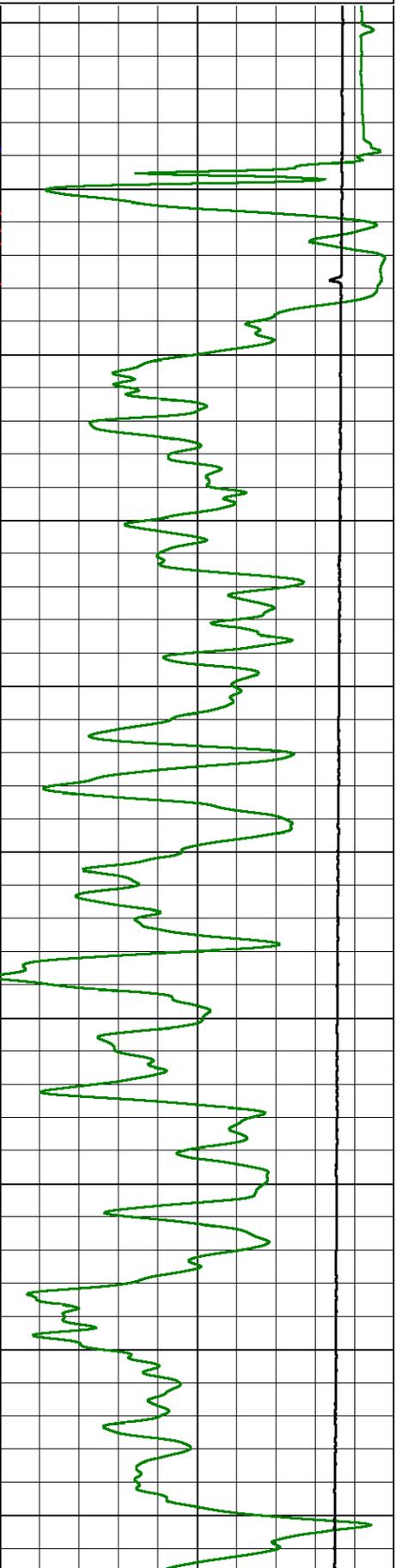
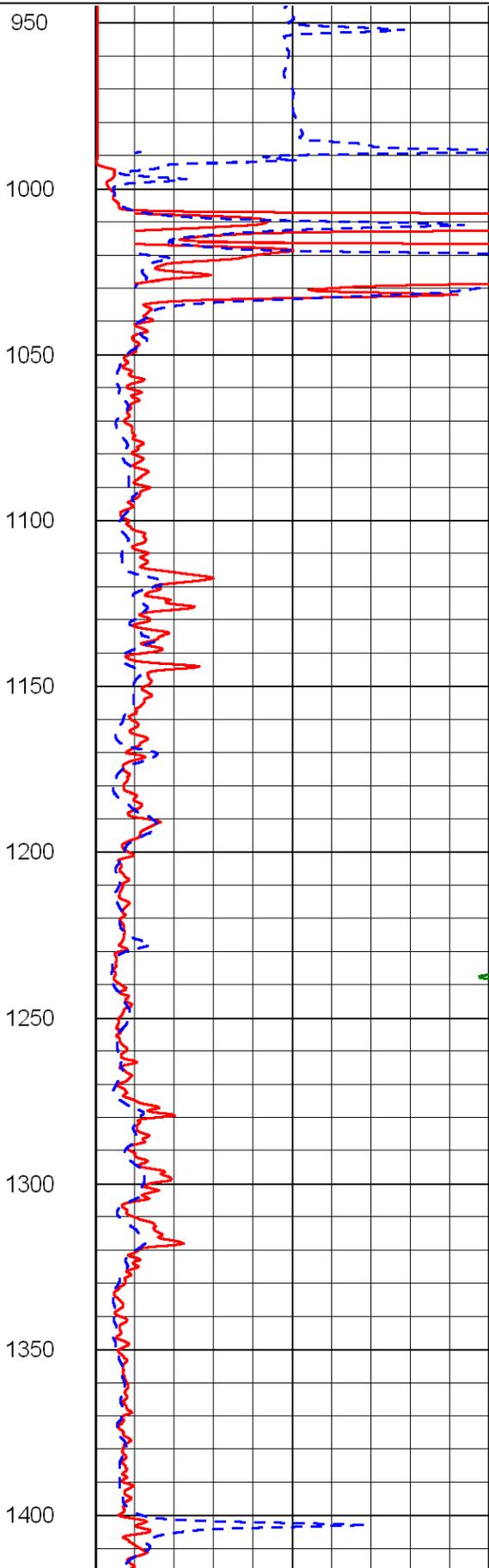
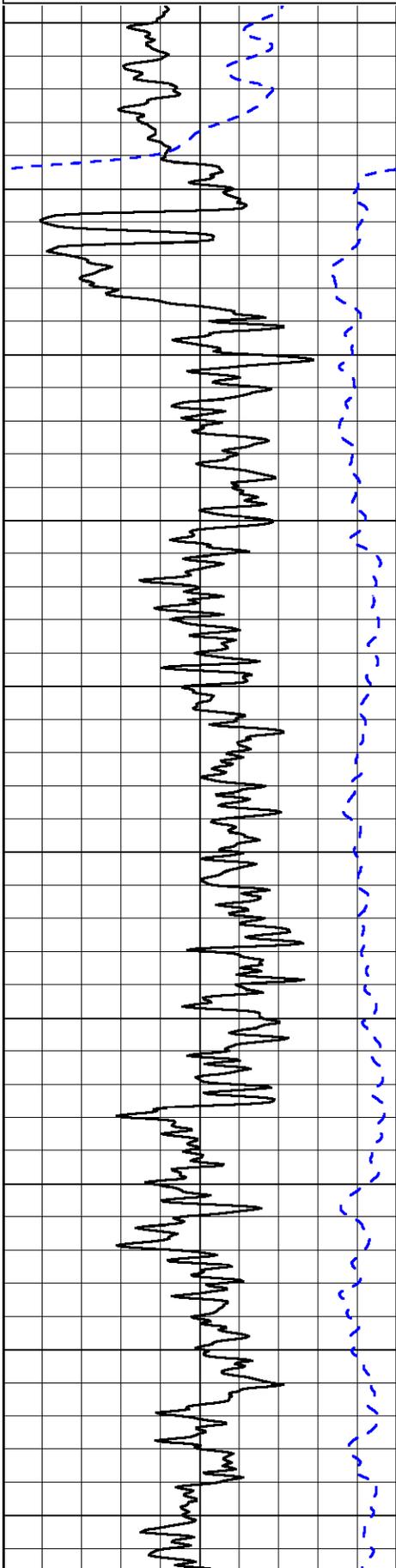
Thank you for using Log-Tech, Inc.
(785) 625-3858

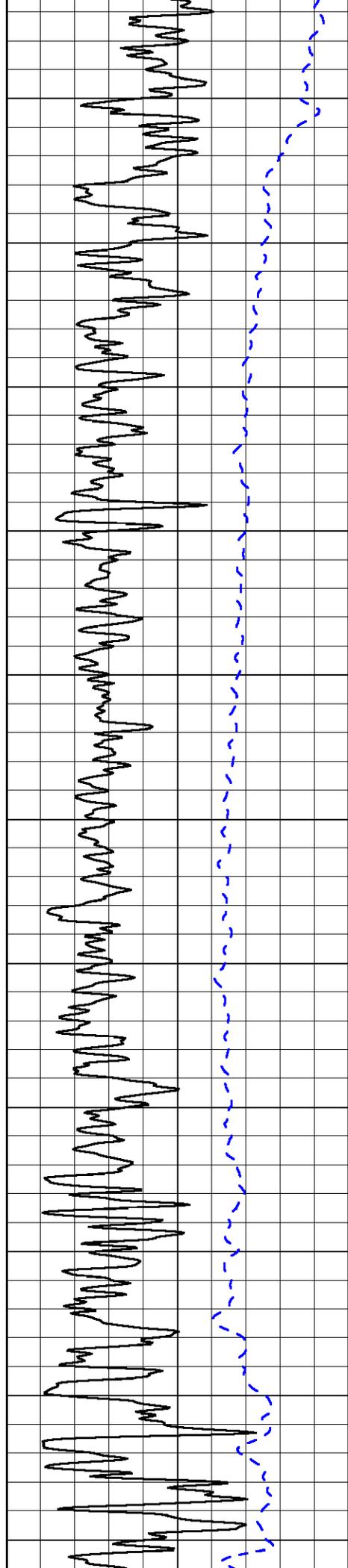
Pawnee Rock, KS, 5 1/2 West On T RD,
North Into

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 Charted by: Depth in Feet scaled 1:600

0 Gamma Ray 150
-200 SP 0

0 Shallow Resistivity 50
0 Deep Resistivity 50
1000 Conductivity 0
15000 Line Tension 0
50 Shallow Resistivity 50
50 Deep Resistivity 50





1450

1500

1550

1600

1650

1700

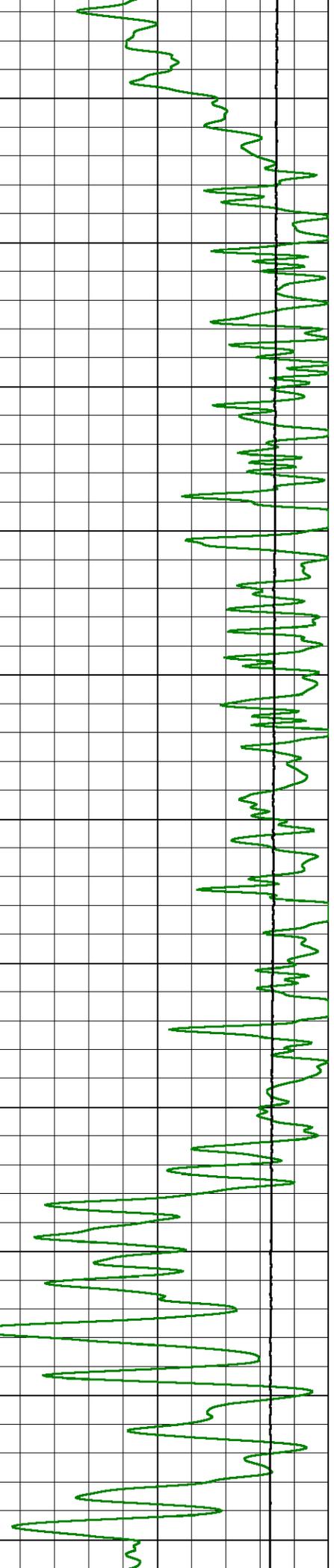
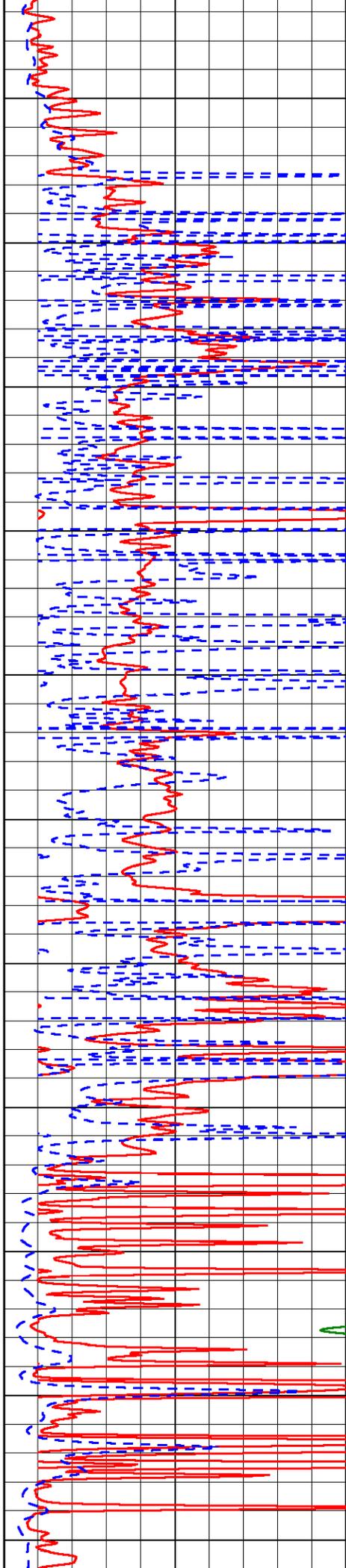
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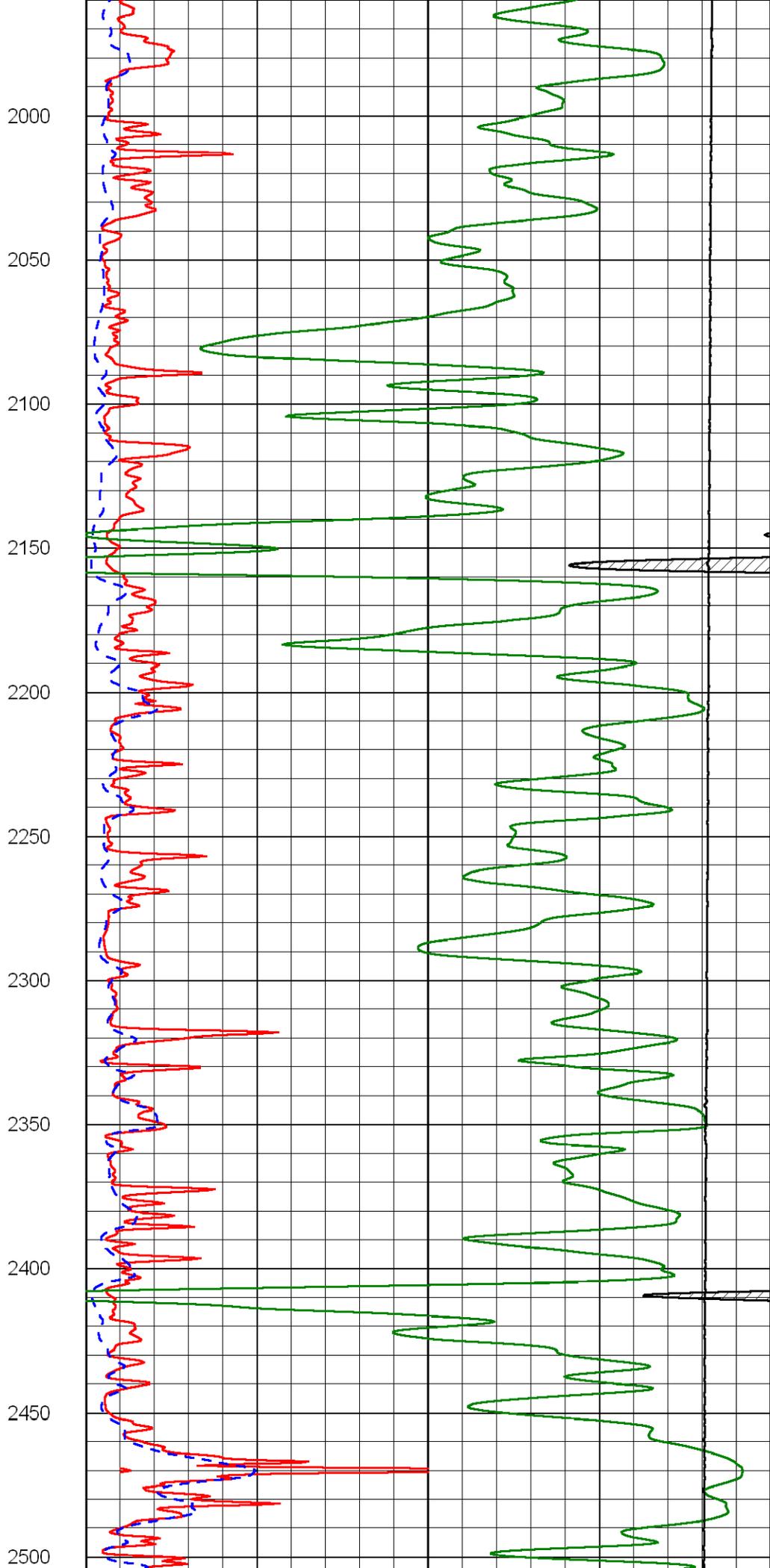
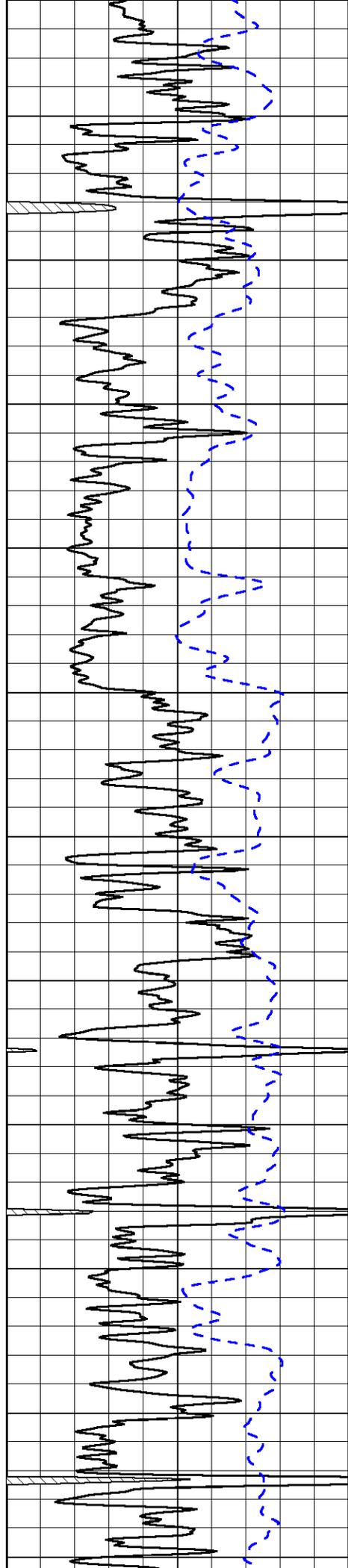
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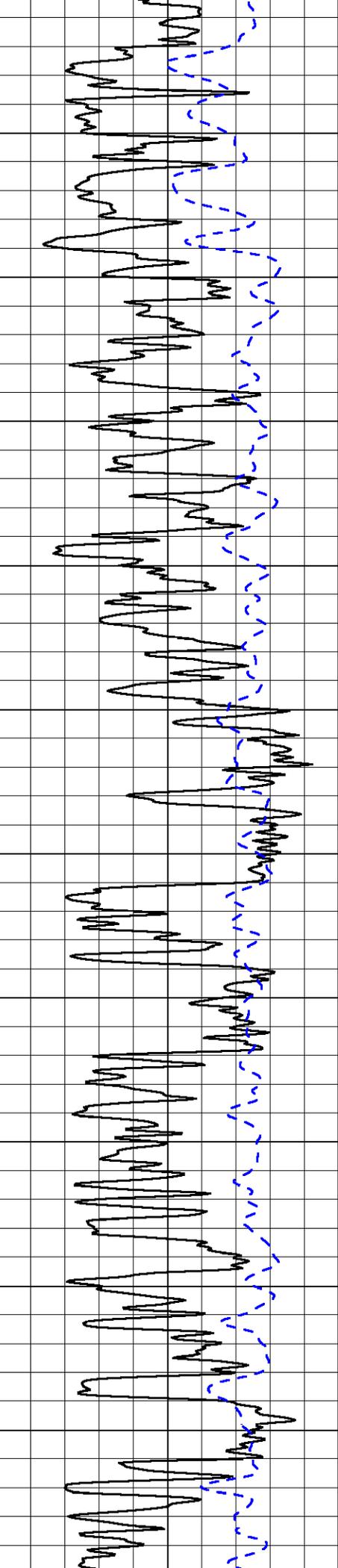
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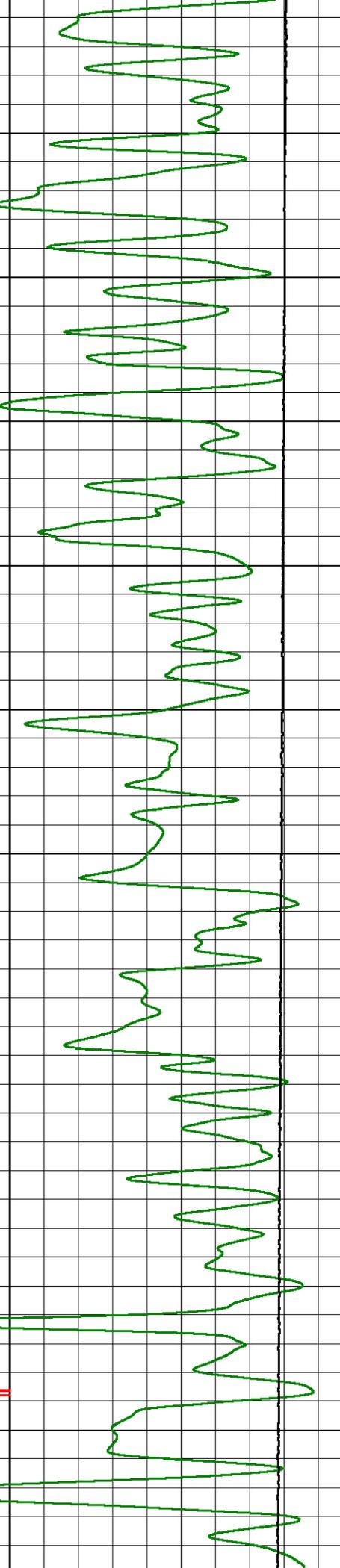
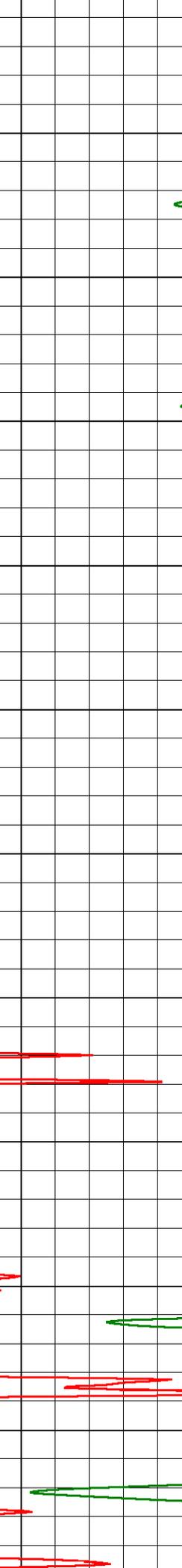
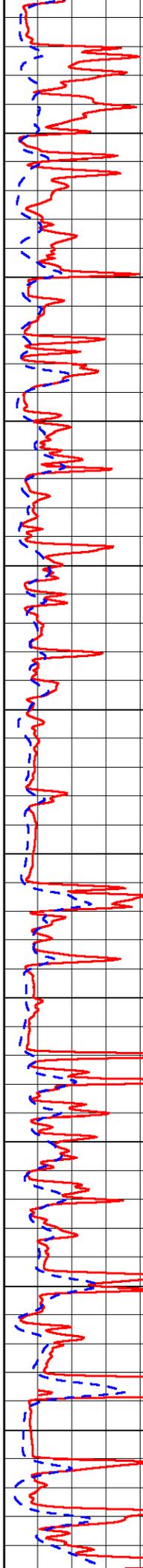
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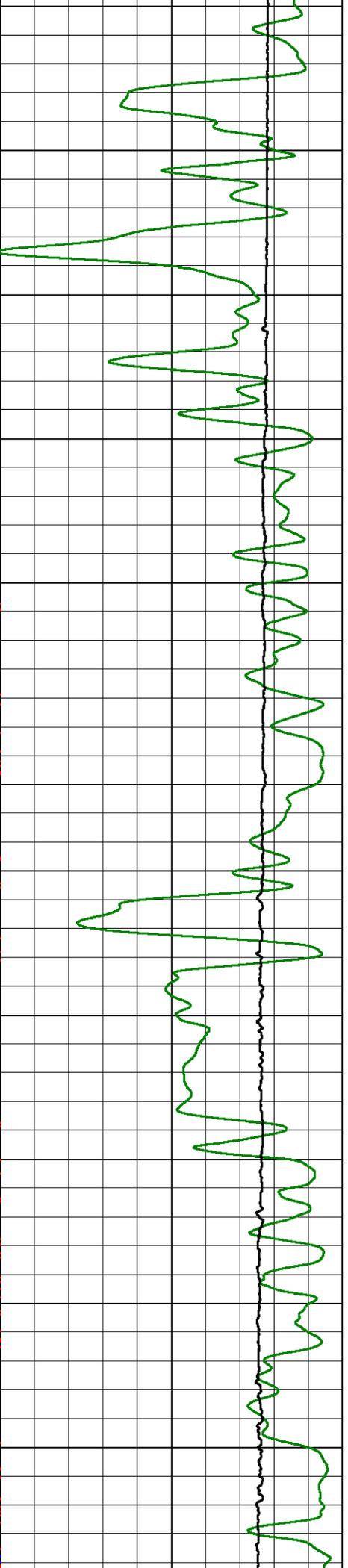
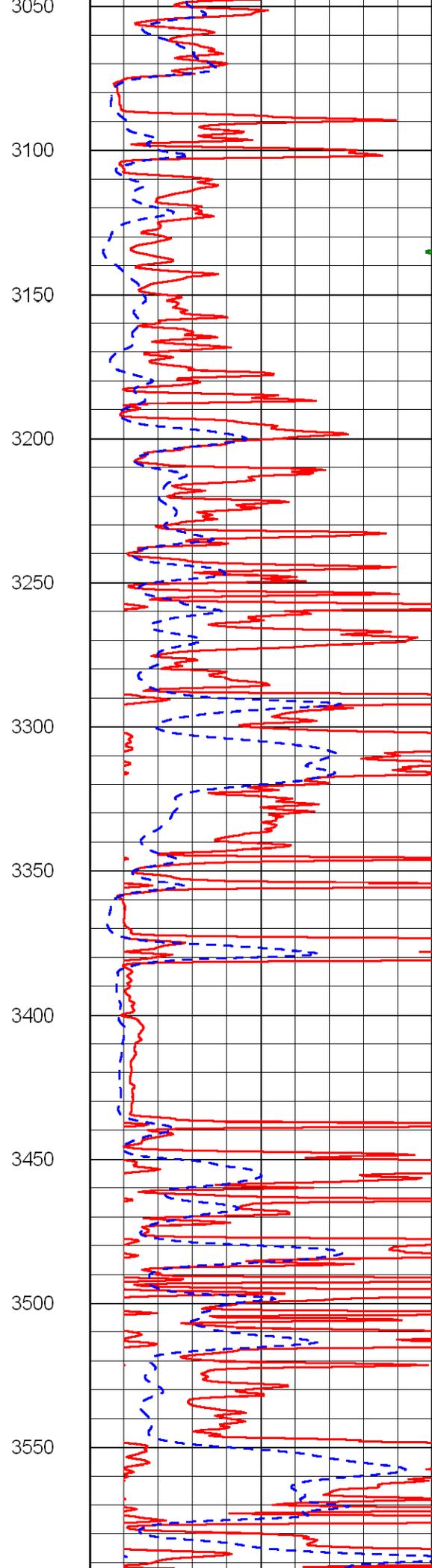
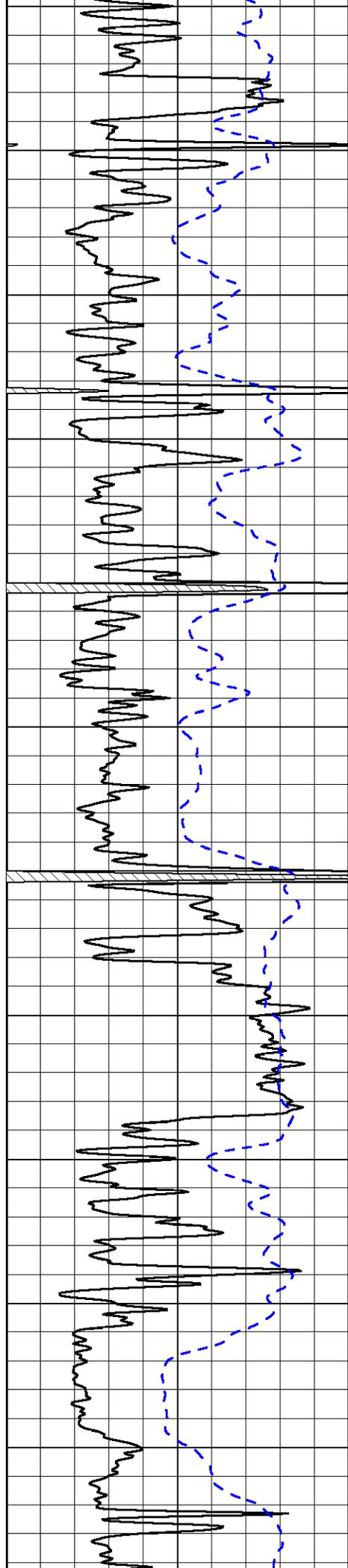


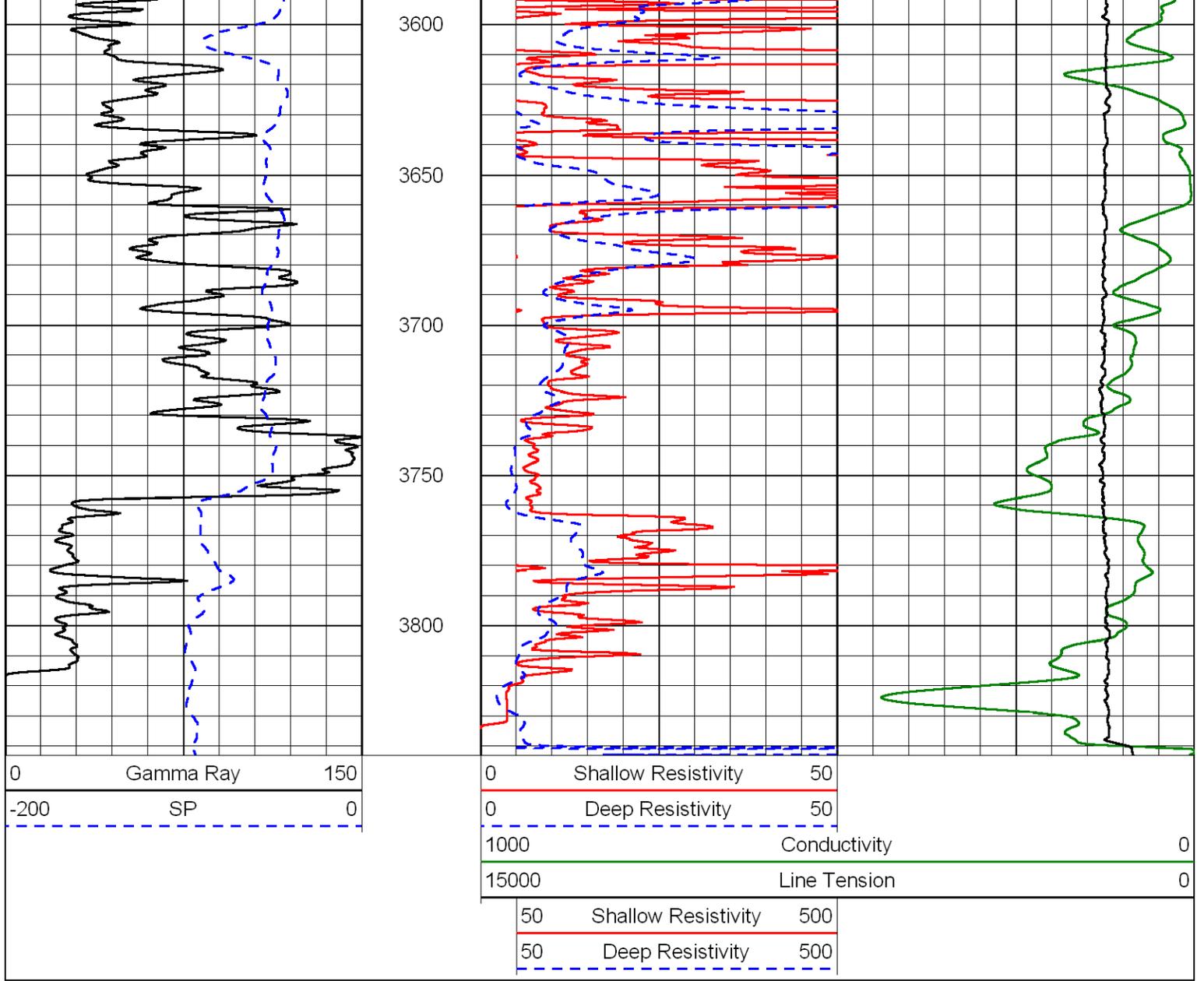




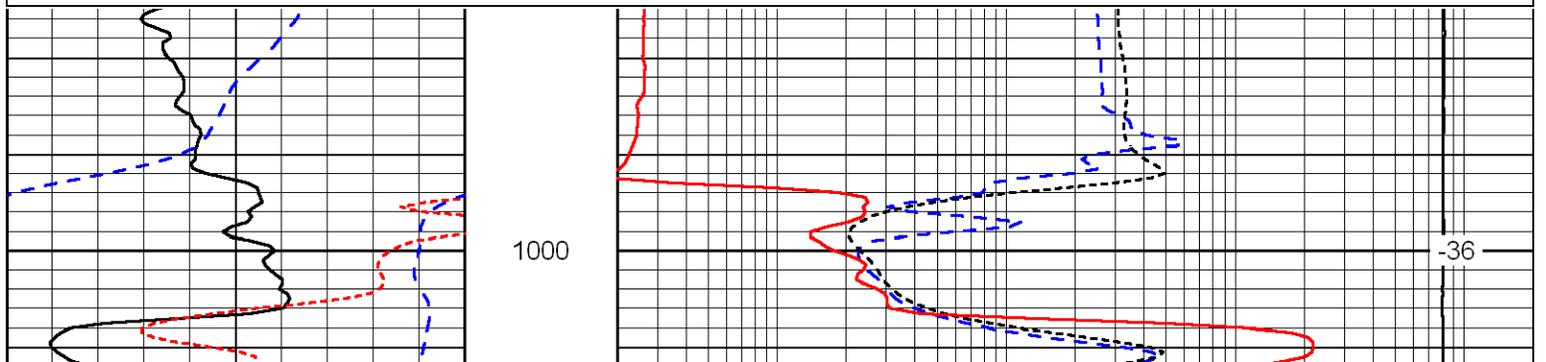
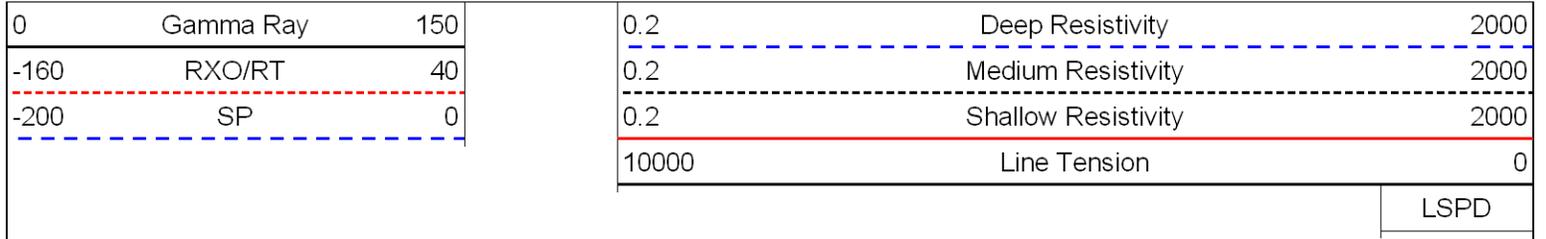
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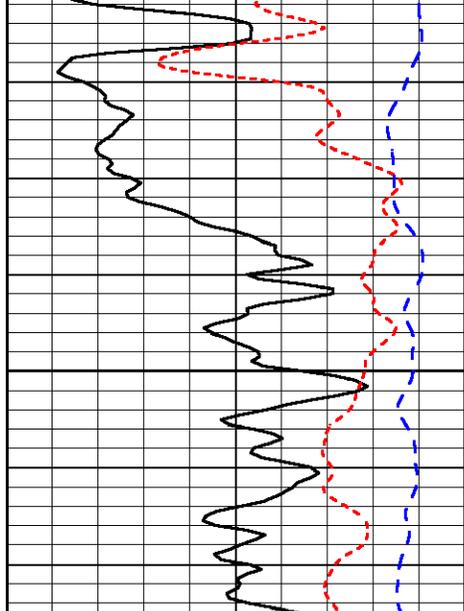






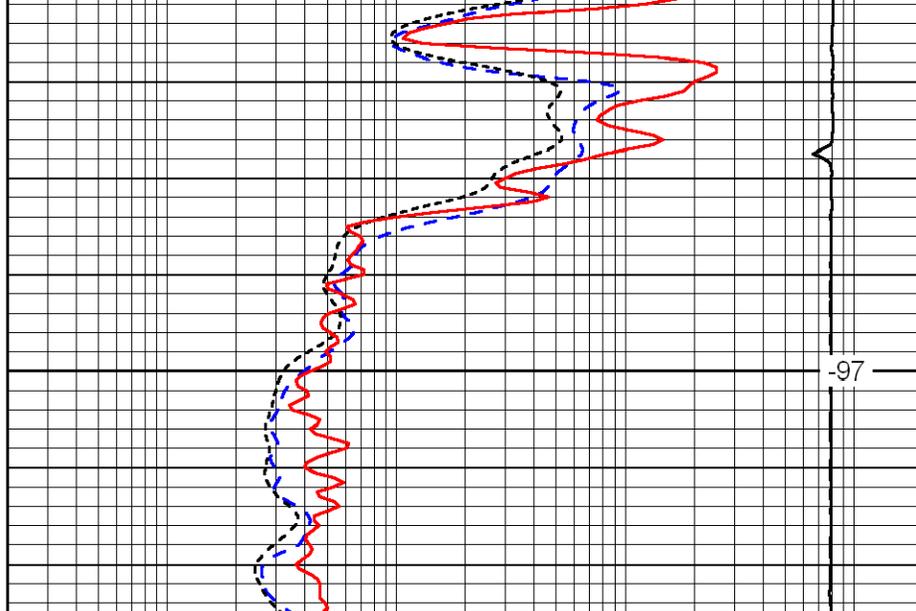
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1050

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



-97

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

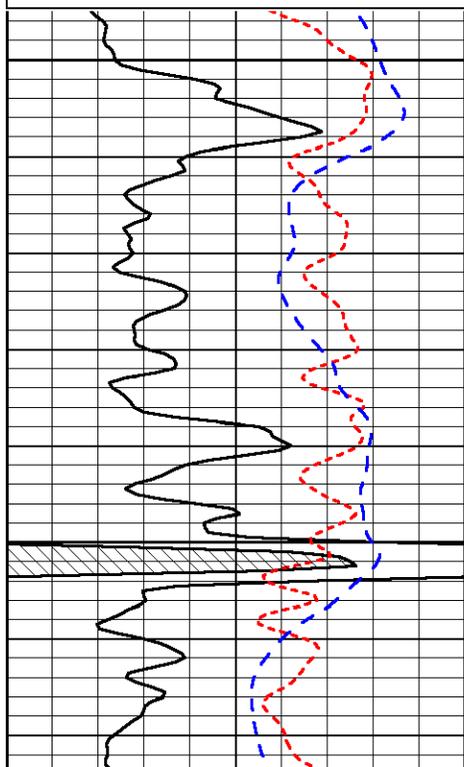
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0	Gamma Ray	150
-160	RXO/RT	40
-200	SP	0

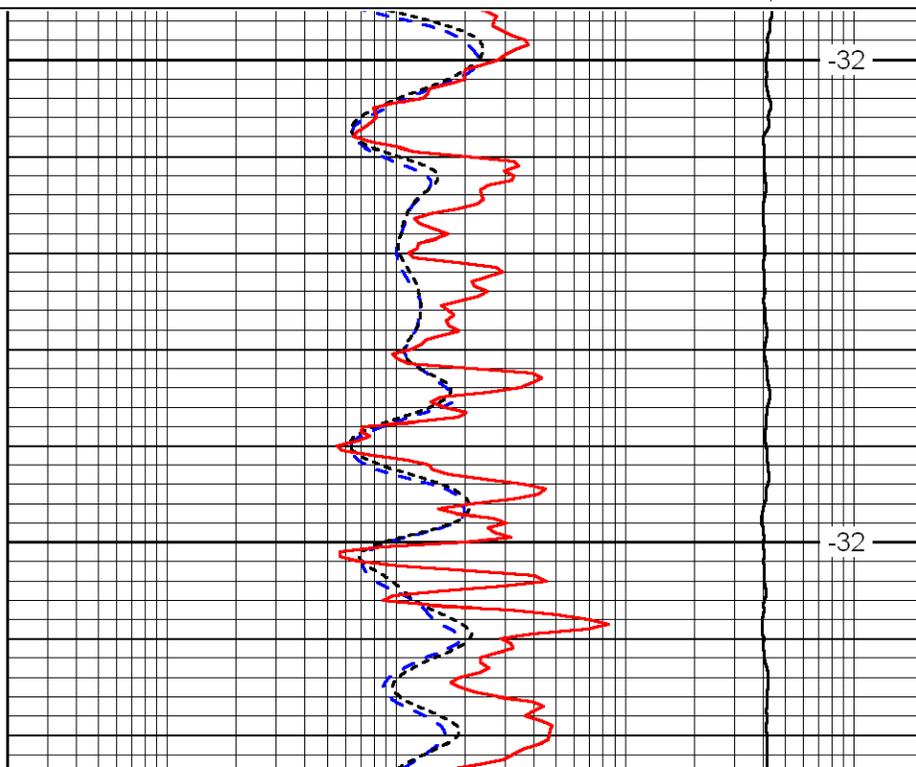
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0.2	Medium Resistivity	2000
0.2	Shallow Resistivity	2000
10000	Line Tension	0

LSPD



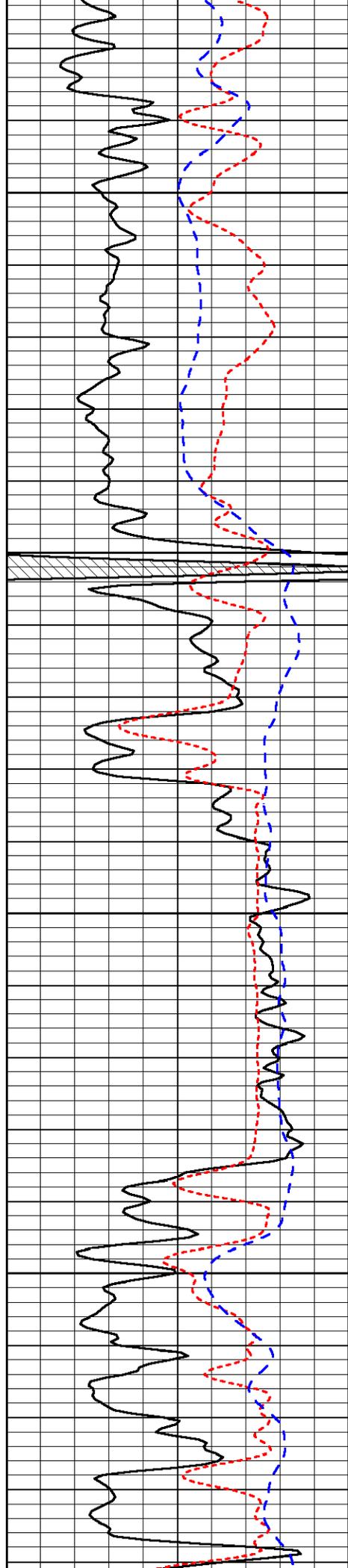
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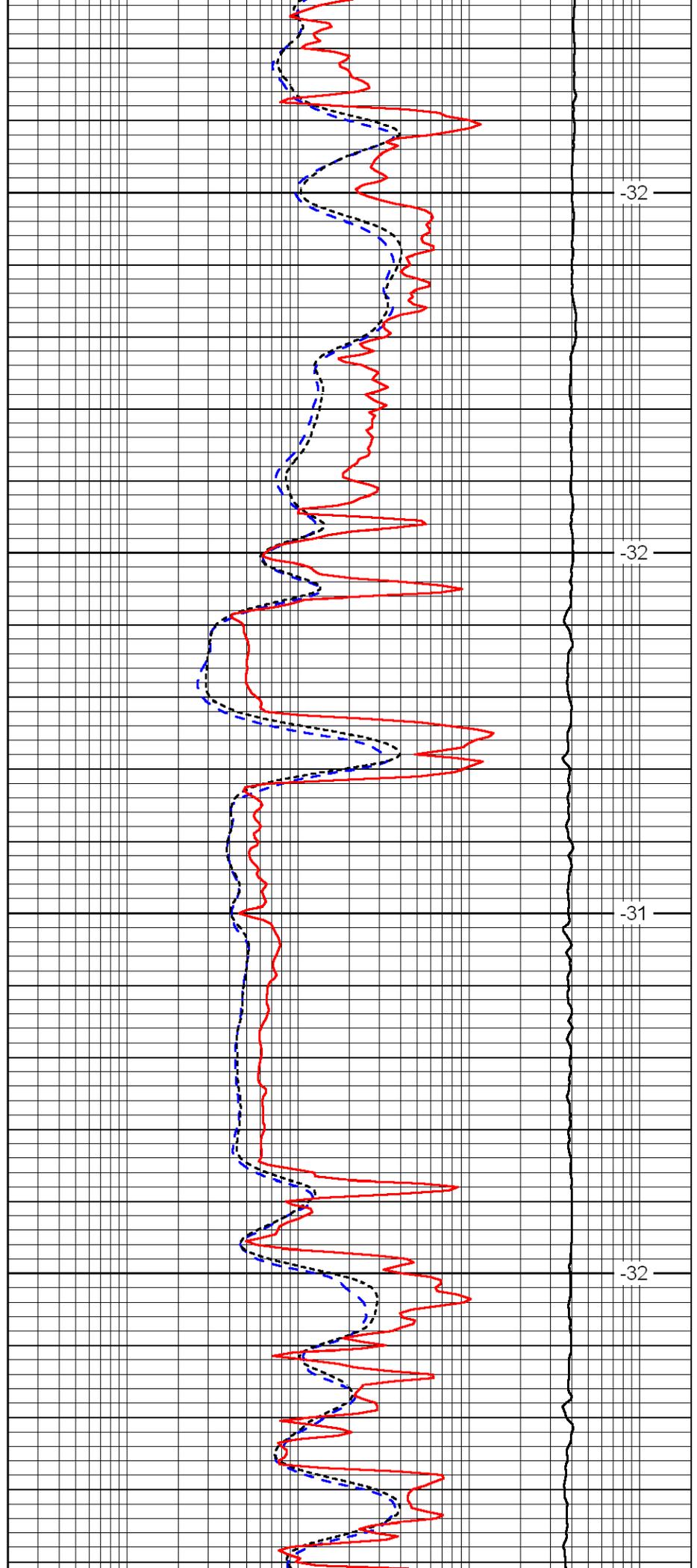


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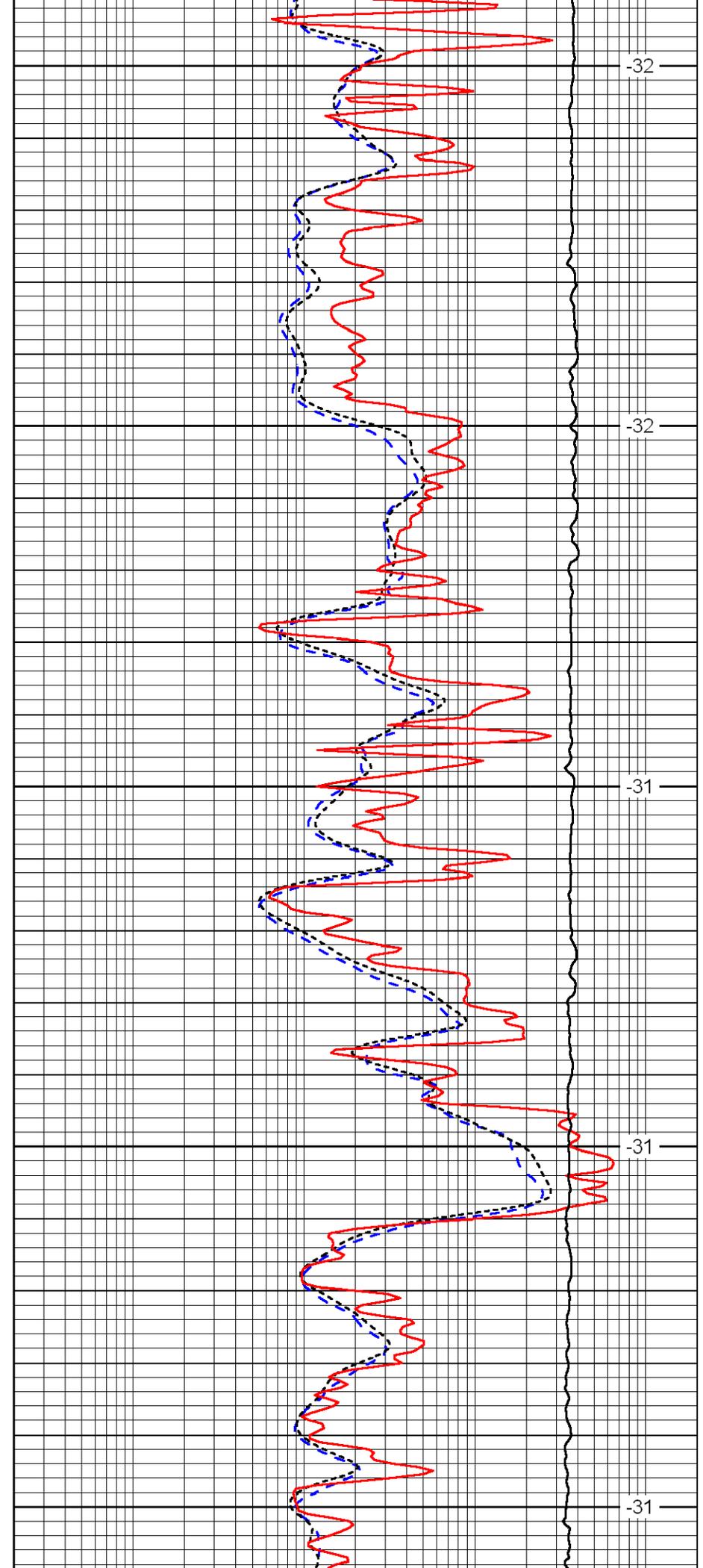
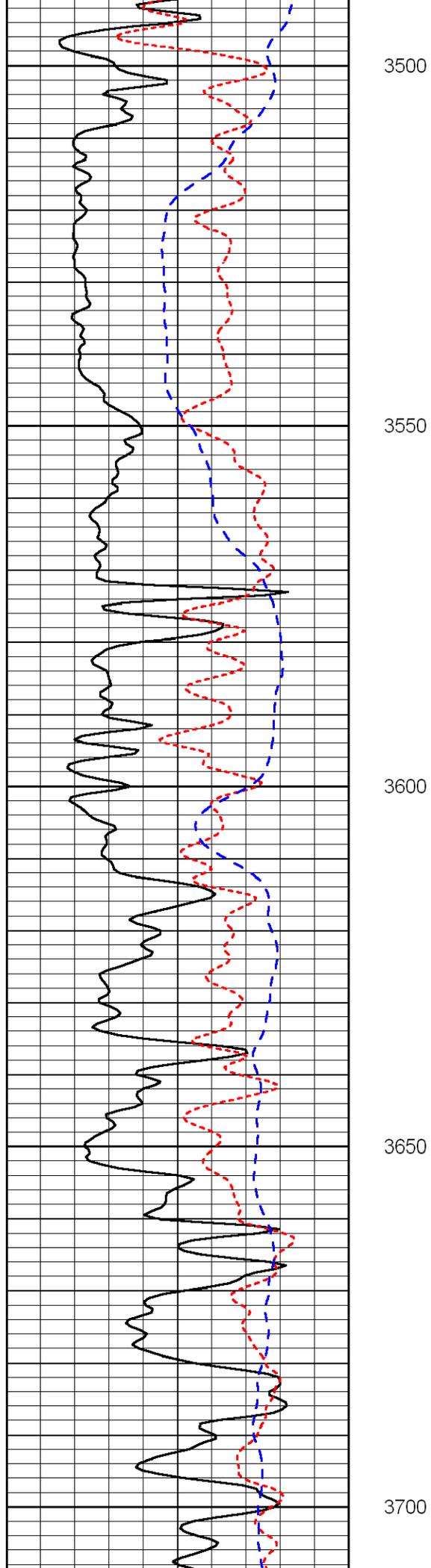


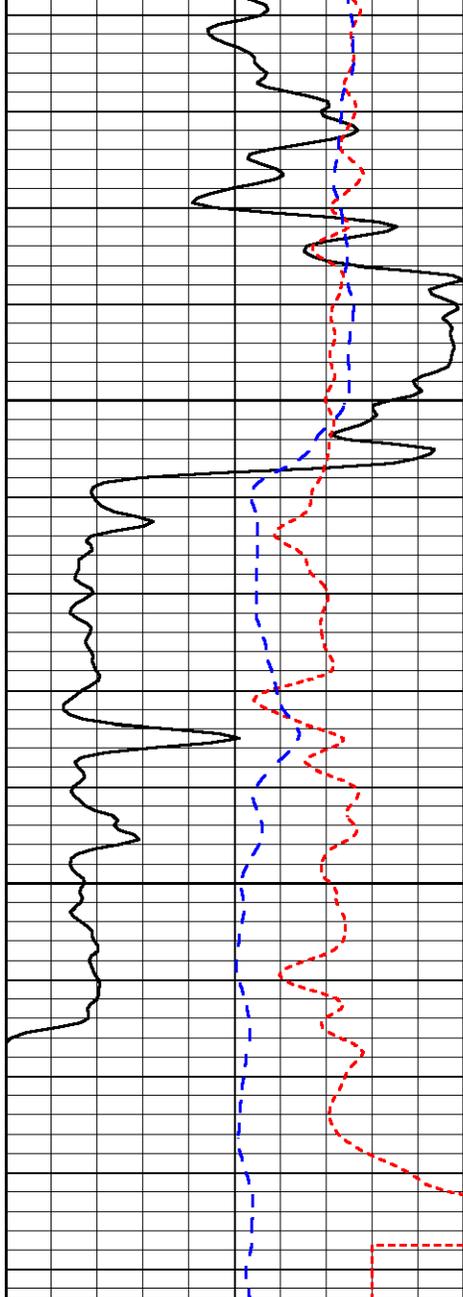
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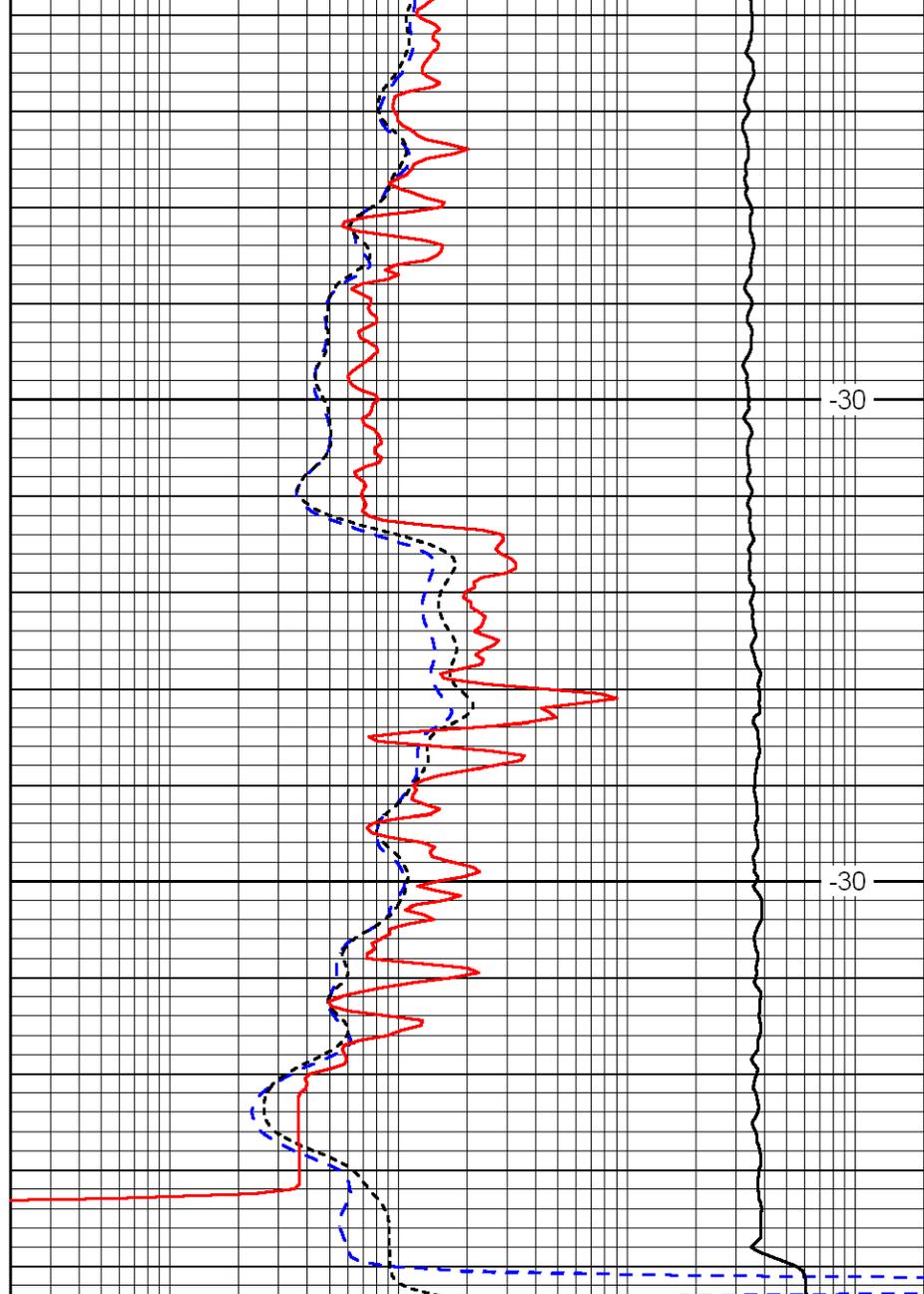




0	Gamma Ray	150
-160	RXO/RT	40
-200	SP	0

3750

3800



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

LSPD