PIONEER

Pioneer Energy Services

Borehole Compensated Sonic Log

API No. 15-065-23937-00-00

Company Murfin Drilling Co., Inc.

Well Ruder Unit #2-36

Field Geyer East

County Graham State Kansas

Location 335' FSL / 2600' FEL

Sec: 36 Twp: 10S Rge: 24W

Other Services
CNL/CDL
MEL/DIL

Elevation
K.B. 2331
D.F.
G.L. 2326

Permanent Datum	Ground Level	Elevation 2326
Log Measured From	Kelly Bushing	5 Ft. Above Perm. Datum
Drilling Measured From	Kelly Bushing	

Date	6/8/2013
Run Number	Two
Type Log	BHC Sonic
Depth Driller	3985
Depth Logger	3982
Bottom Logged Interval	3971
Top Logged Interval	200
Type Fluid In Hole	Chemical
Salinity, PPM CL	3500
Density	9.2
Level	Full
Max. Rec. Temp. F	116
Operating Rig Time	5 Hours
Equipment -- Location	108 | Hays
Recorded By	R. Barnhart
Witnessed By	Rocky Milford

Borehole Record

Run No.	Bit	From	To
One	12.25	00	220
Two	7.875	220	TD

Casing Record

Size	Wgt.	From	To
8.625	23#	00	220

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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.

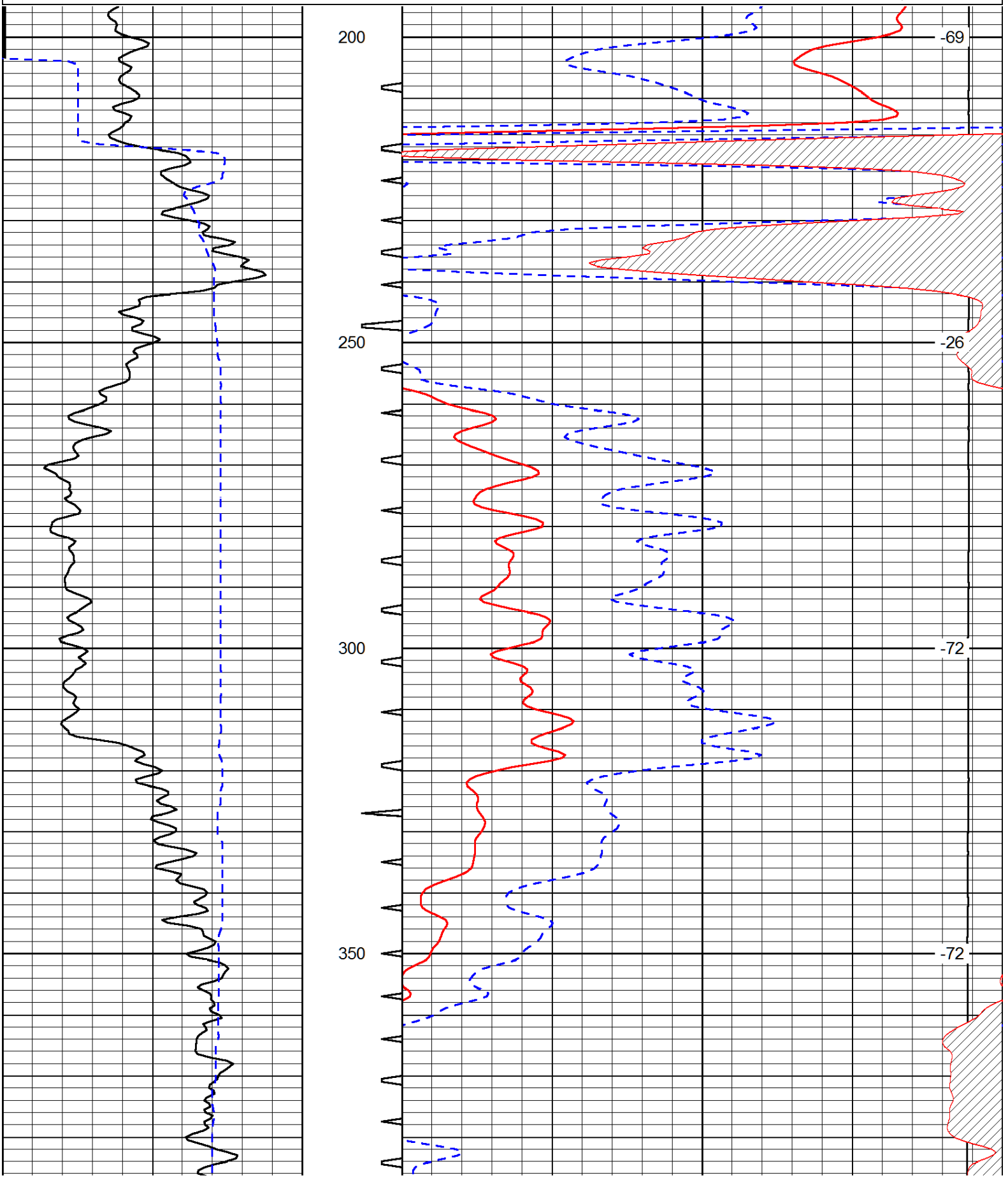
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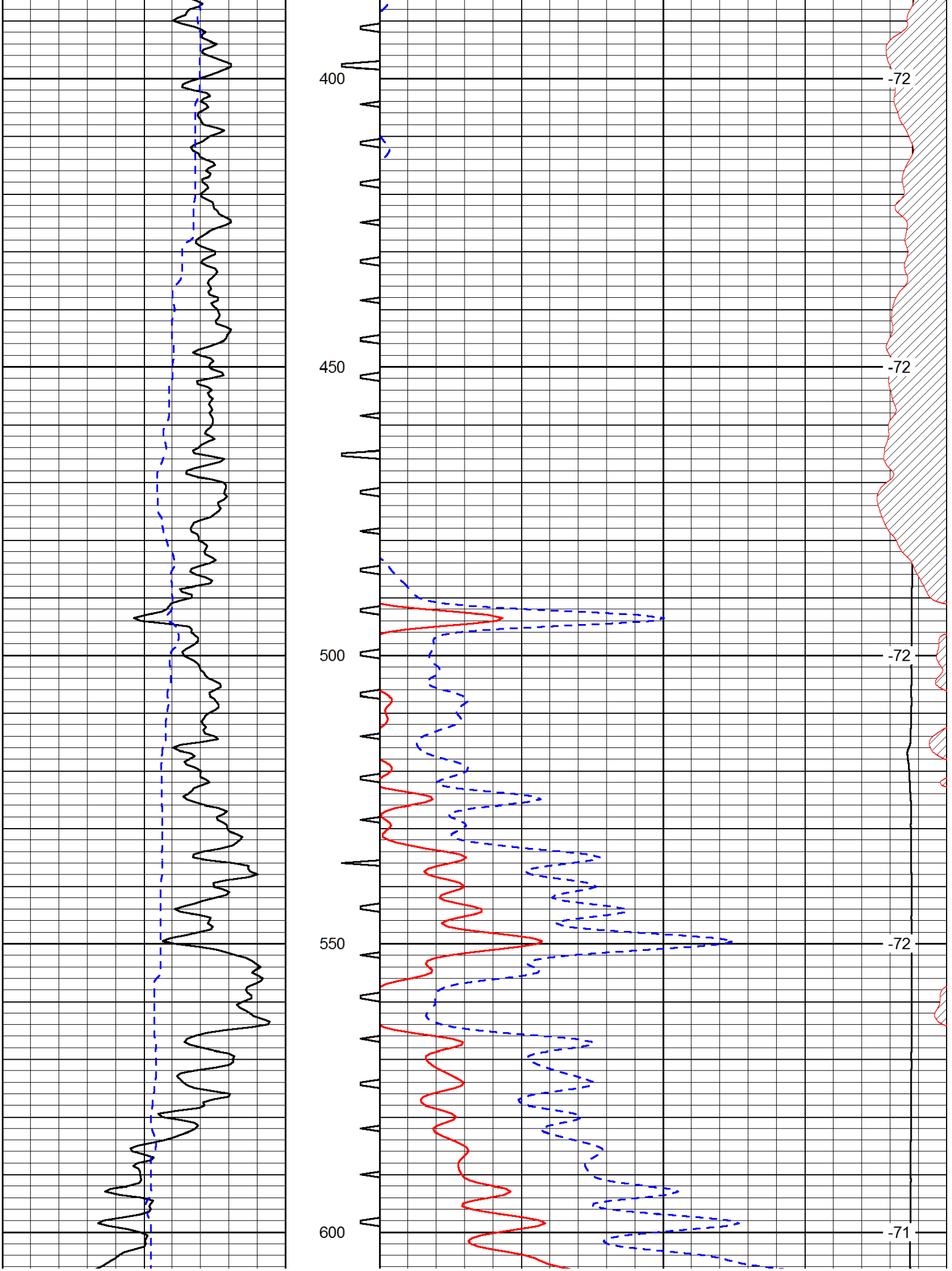
Thank you for using Log-Tech, Inc.
(785) 625-3858

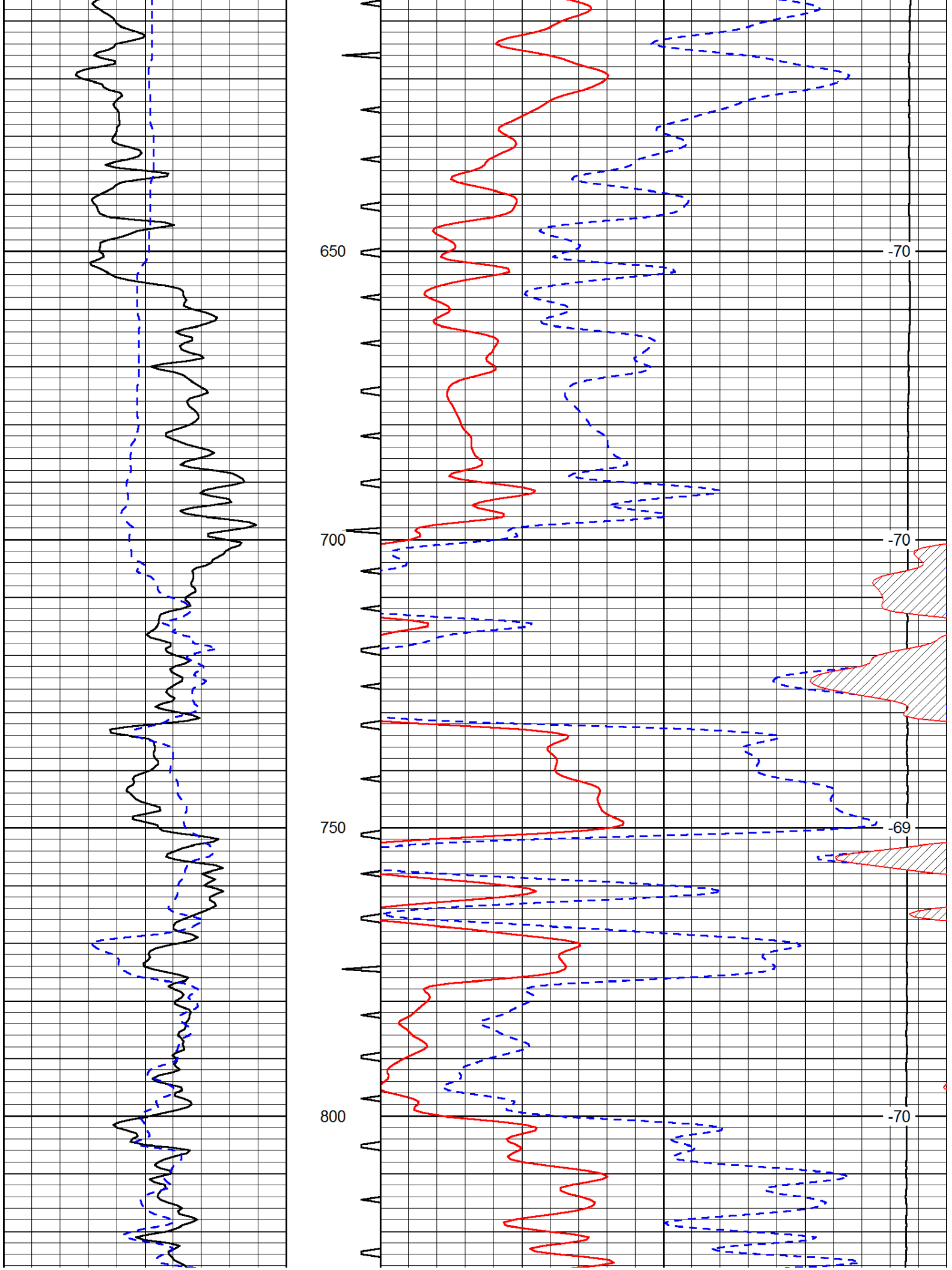
Wakeeney, KS:
7N to Rd. B, 5W to 210 Rd., 1N, E into

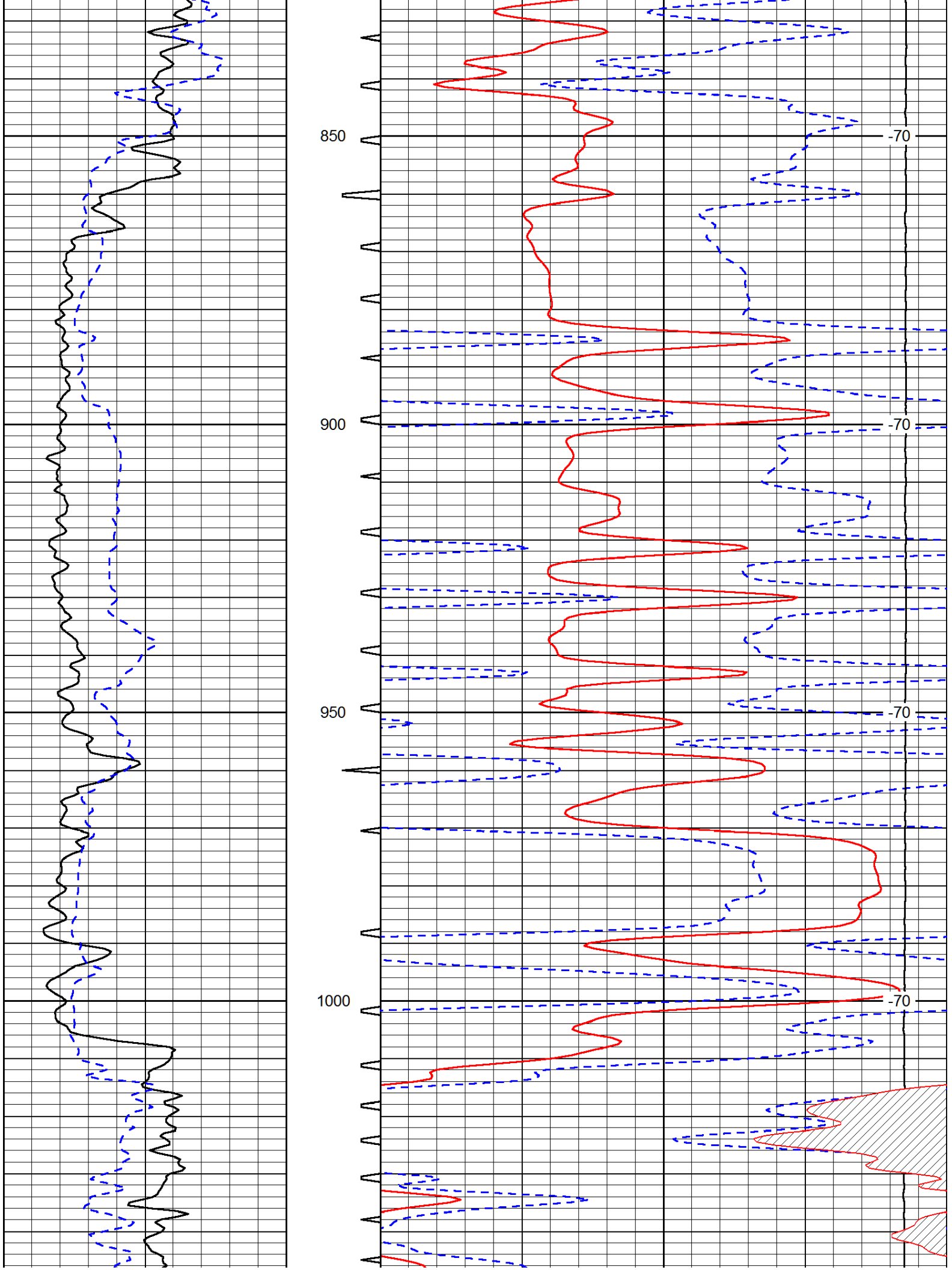
Database File:	murfin_hd.db
Dataset Pathname:	dil/mufmain
Presentation Format:	sonic
Dataset Creation:	Sun Jun 09 16:14:46 2013
Charted by:	Depth in Feet scaled 1:240

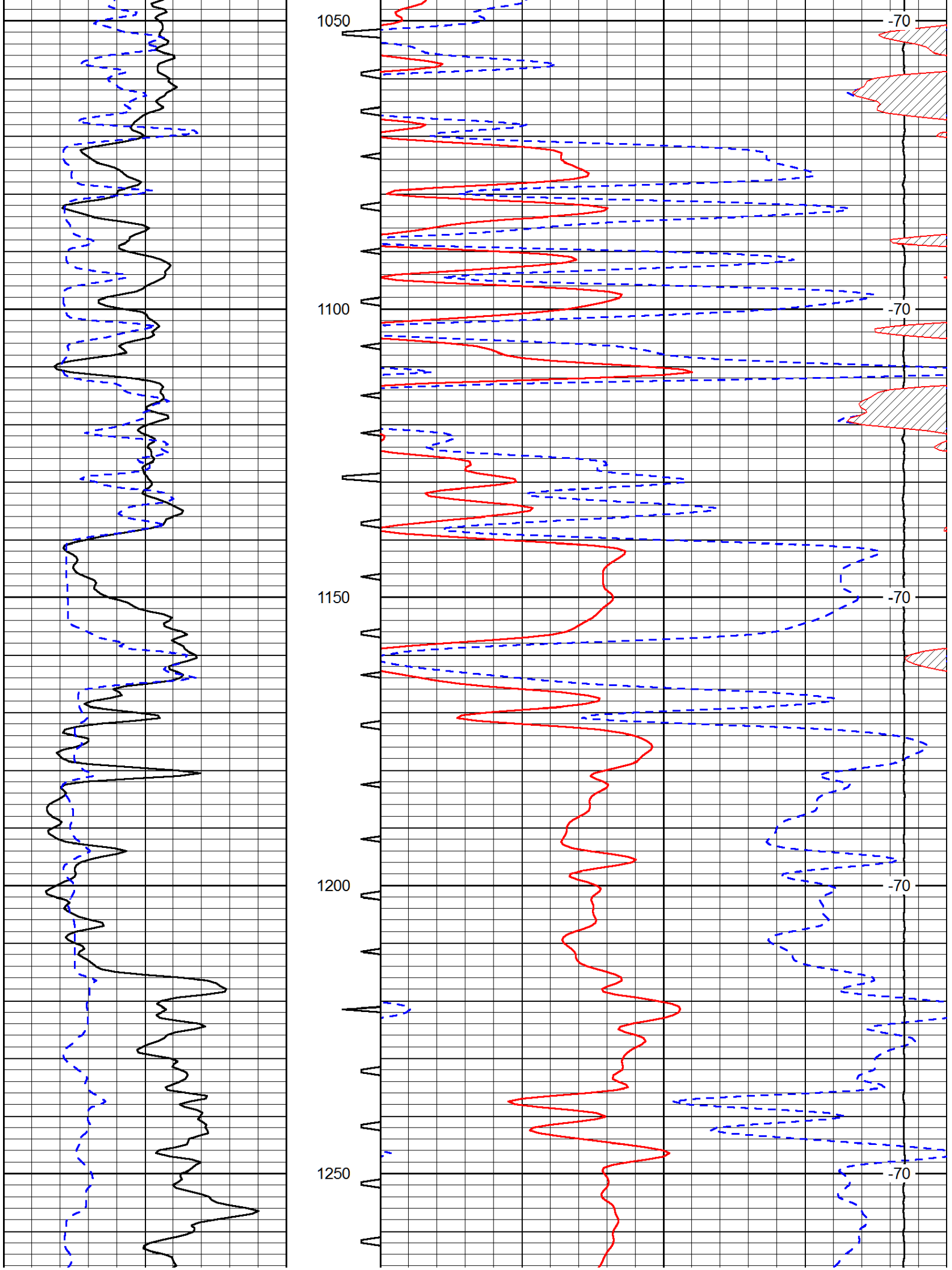
0	Gamma Ray (GAPI)	150	Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
150	Gamma Ray (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu)	-10
6	dCAL (in)	16		15000	LTEN (lb) (lb)	0
						LSPD (ft/min)

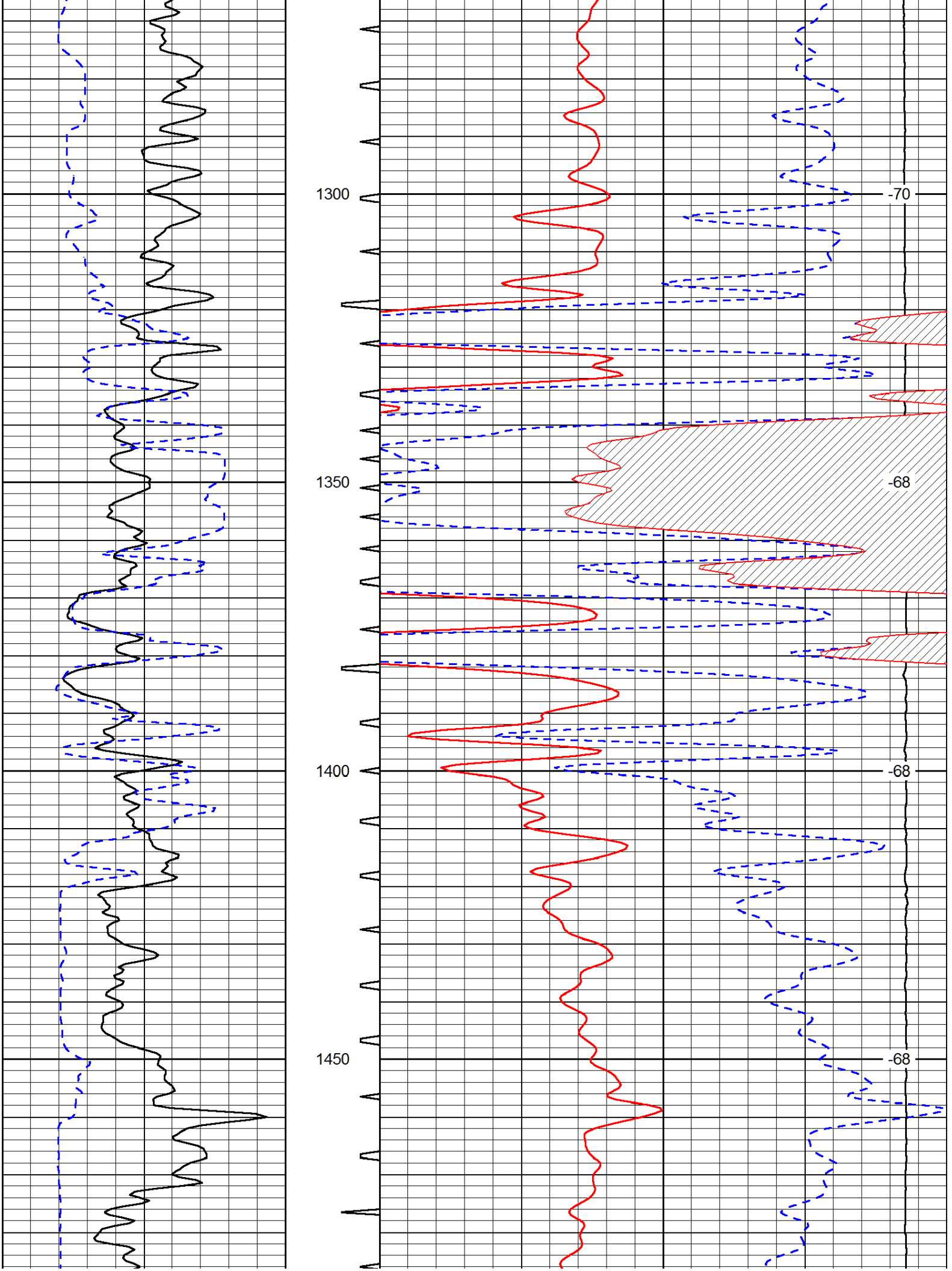


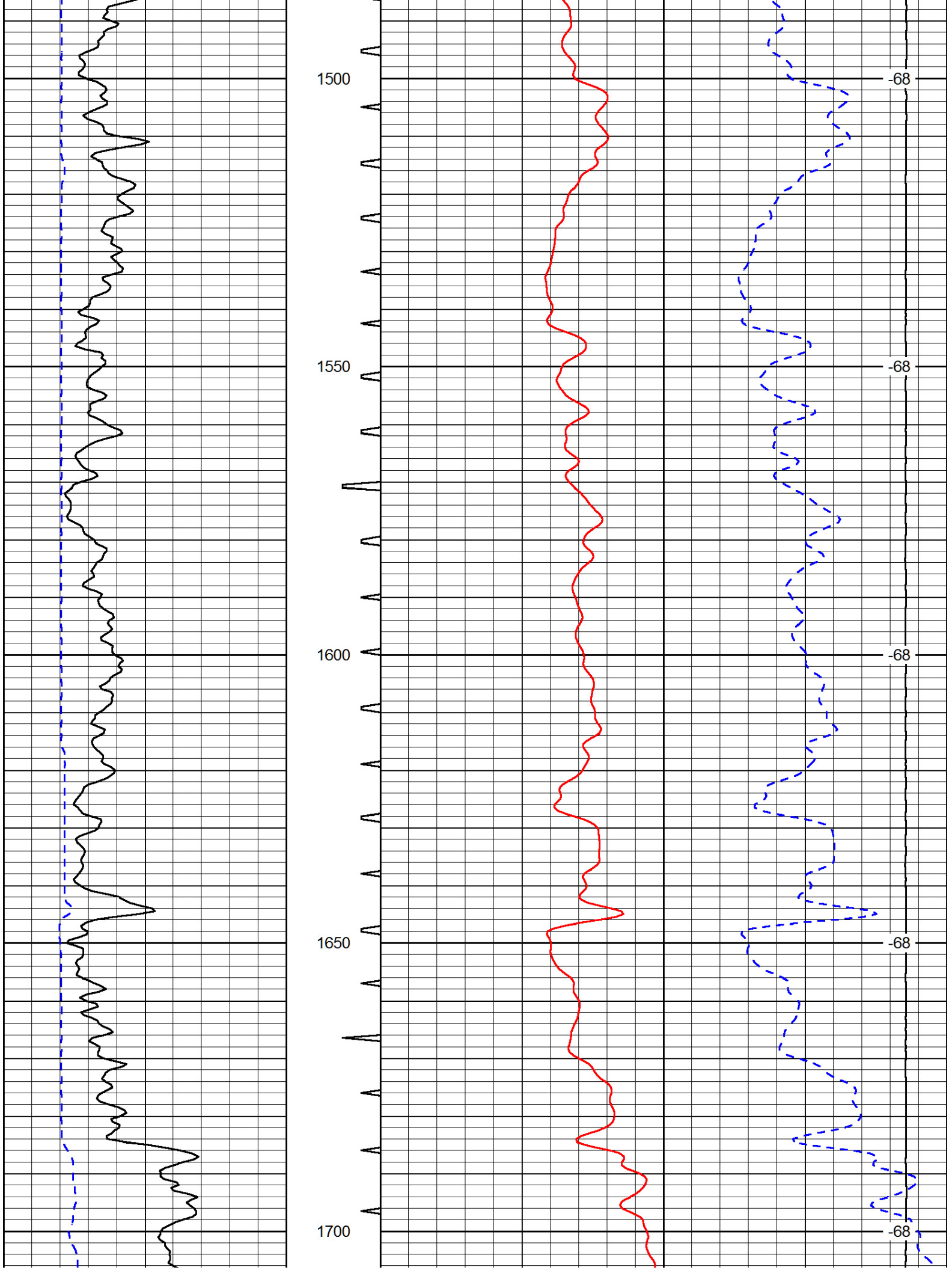

400
450
500
550
600
-72
-72
-72
-72
-71

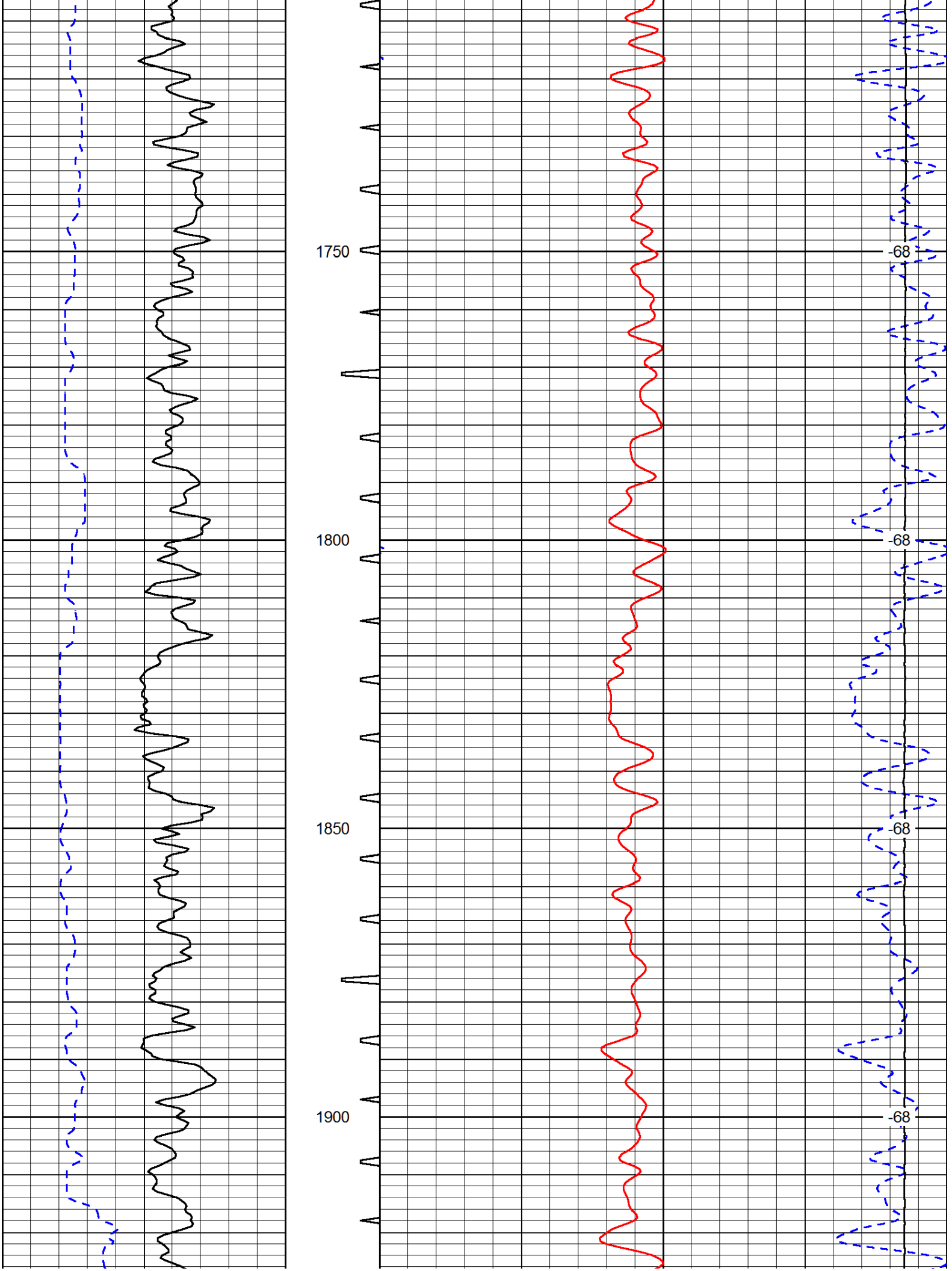

650
700
750
800
-70
-70
-69
-70

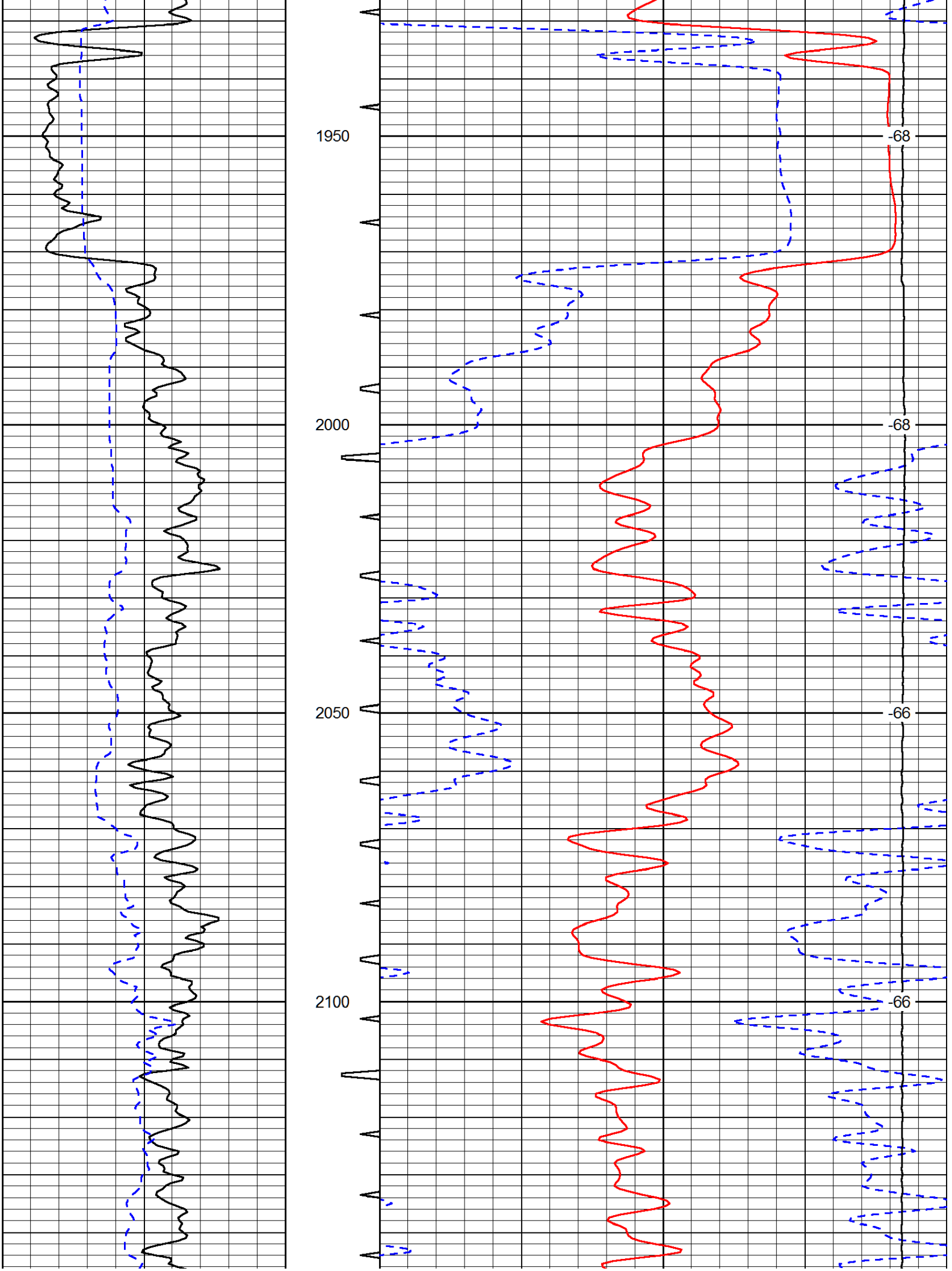

850
900
950
1000
-70
-70
-70
-70

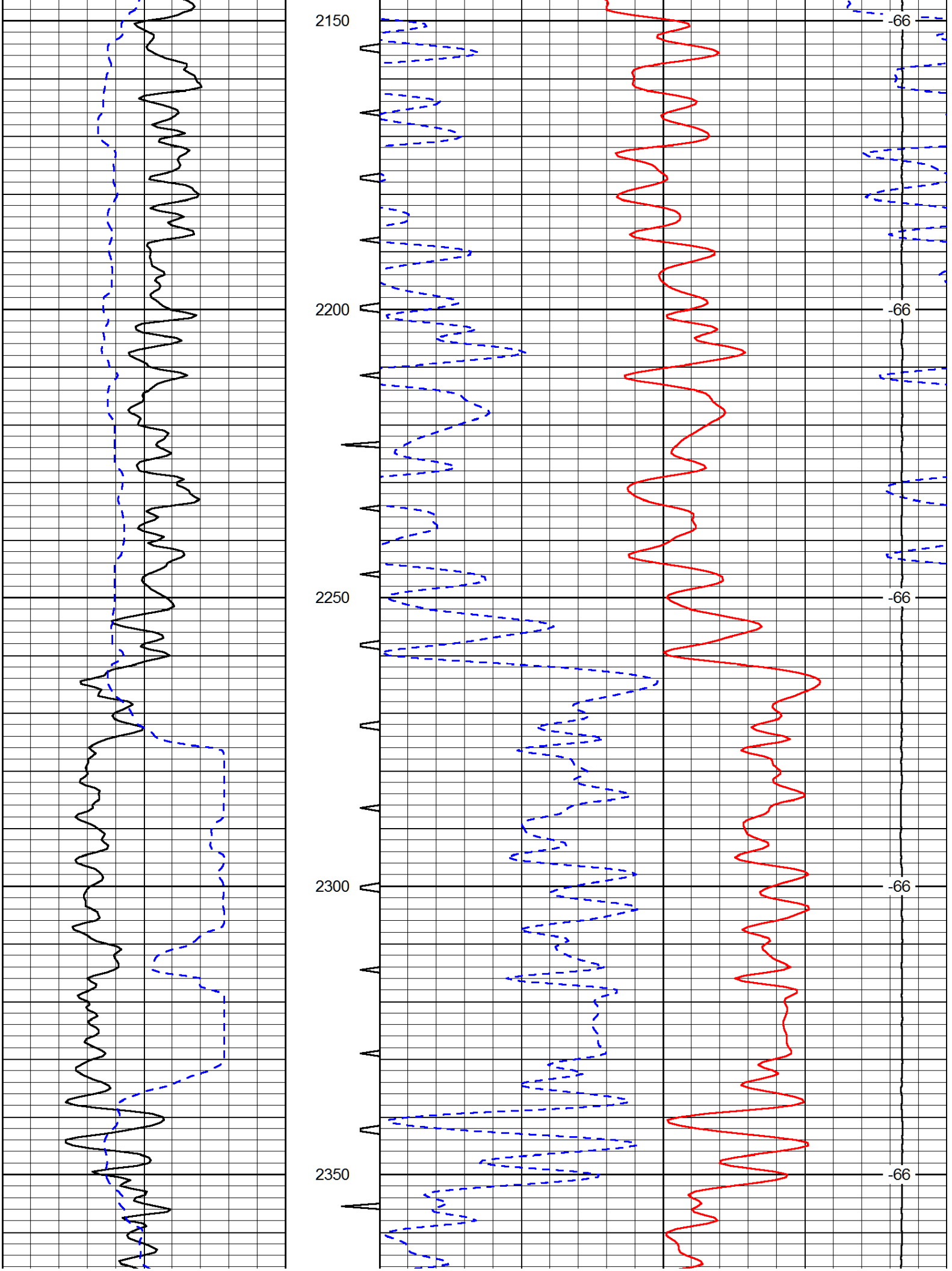

1050
-70
1100
-70
1150
-70
1200
-70
1250
-70

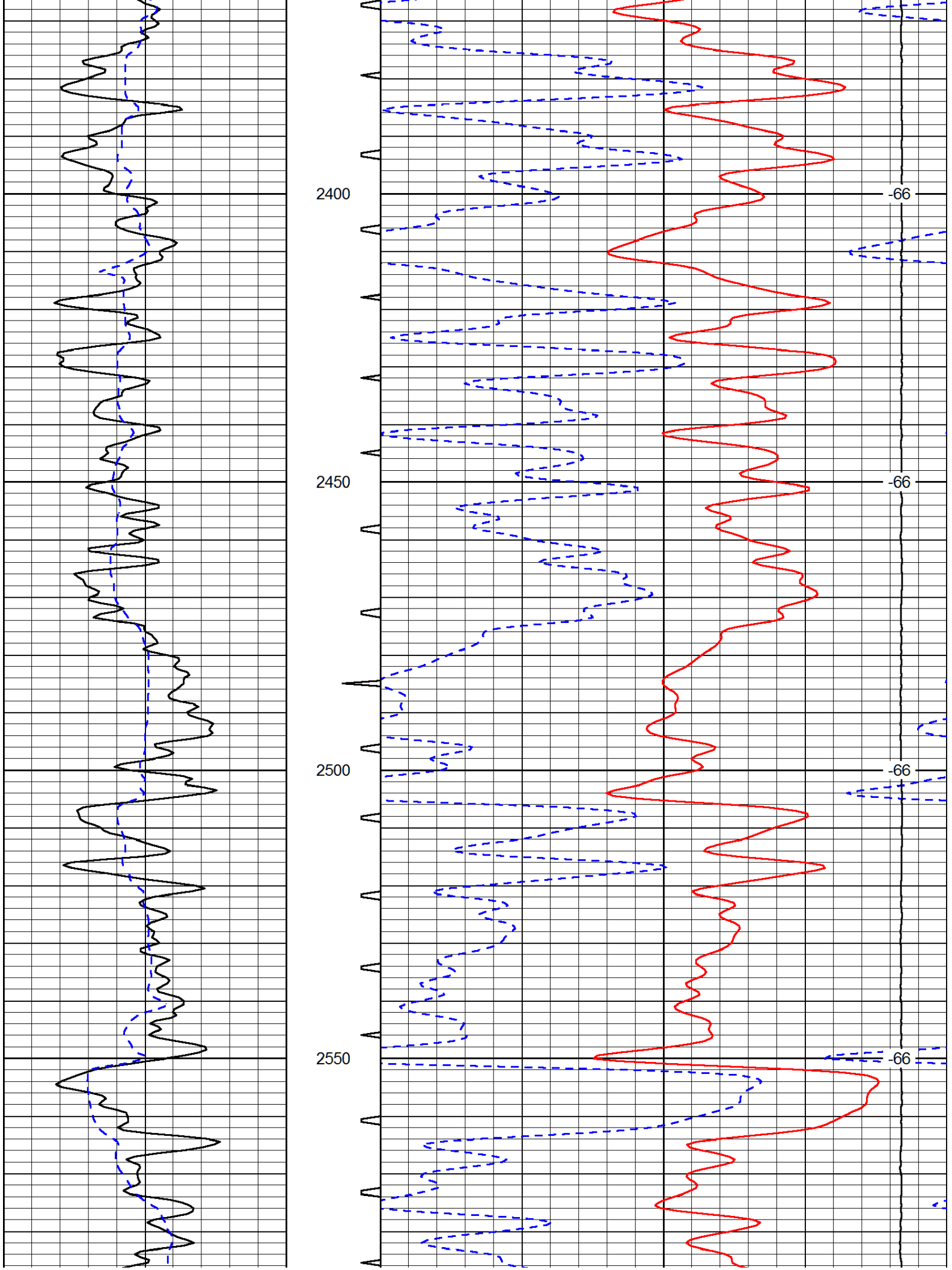

1300
-70
1350
-68
1400
-68
1450
-68

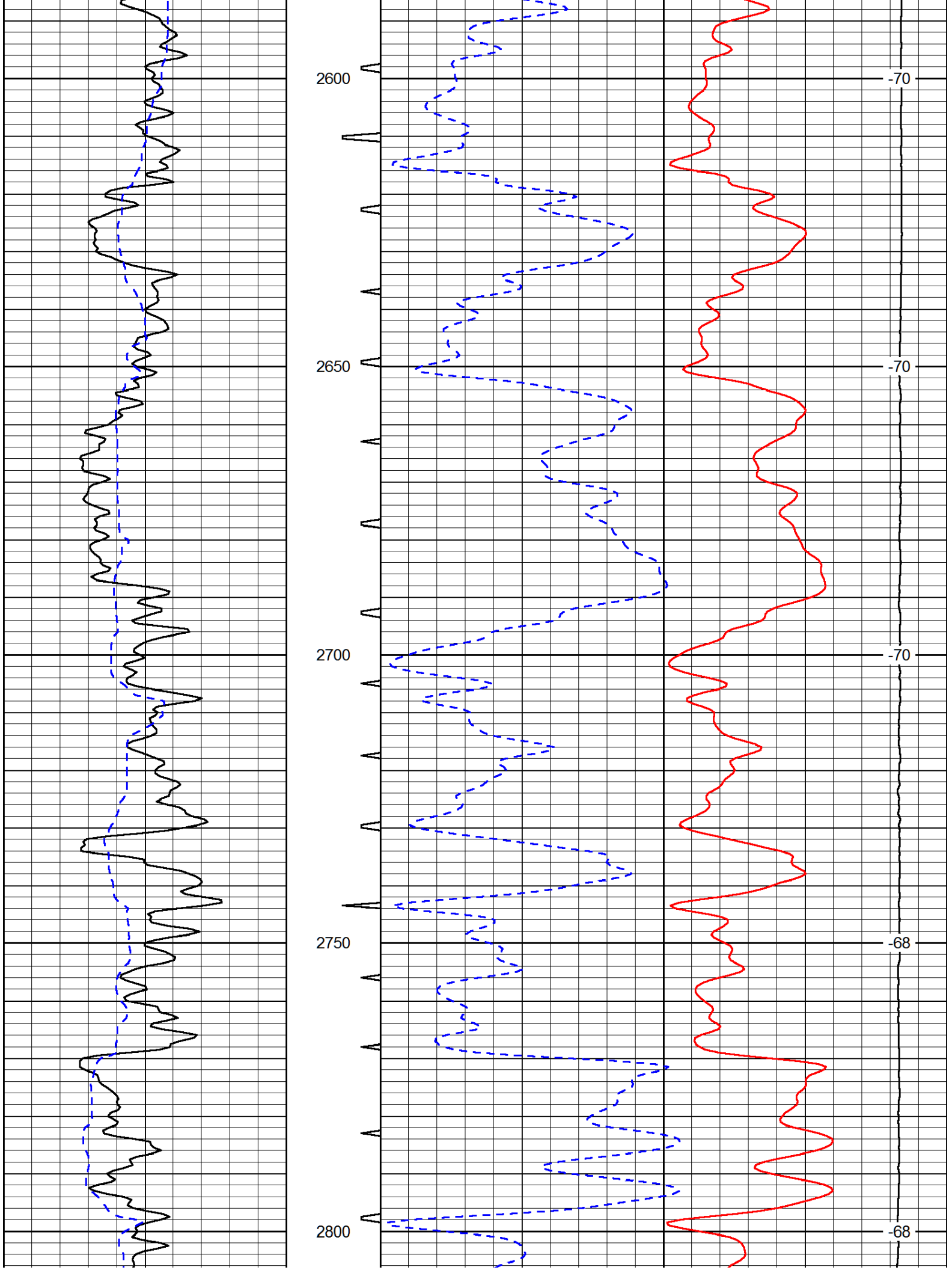

1500
1550
1600
1650
1700
-68
-68
-68
-68

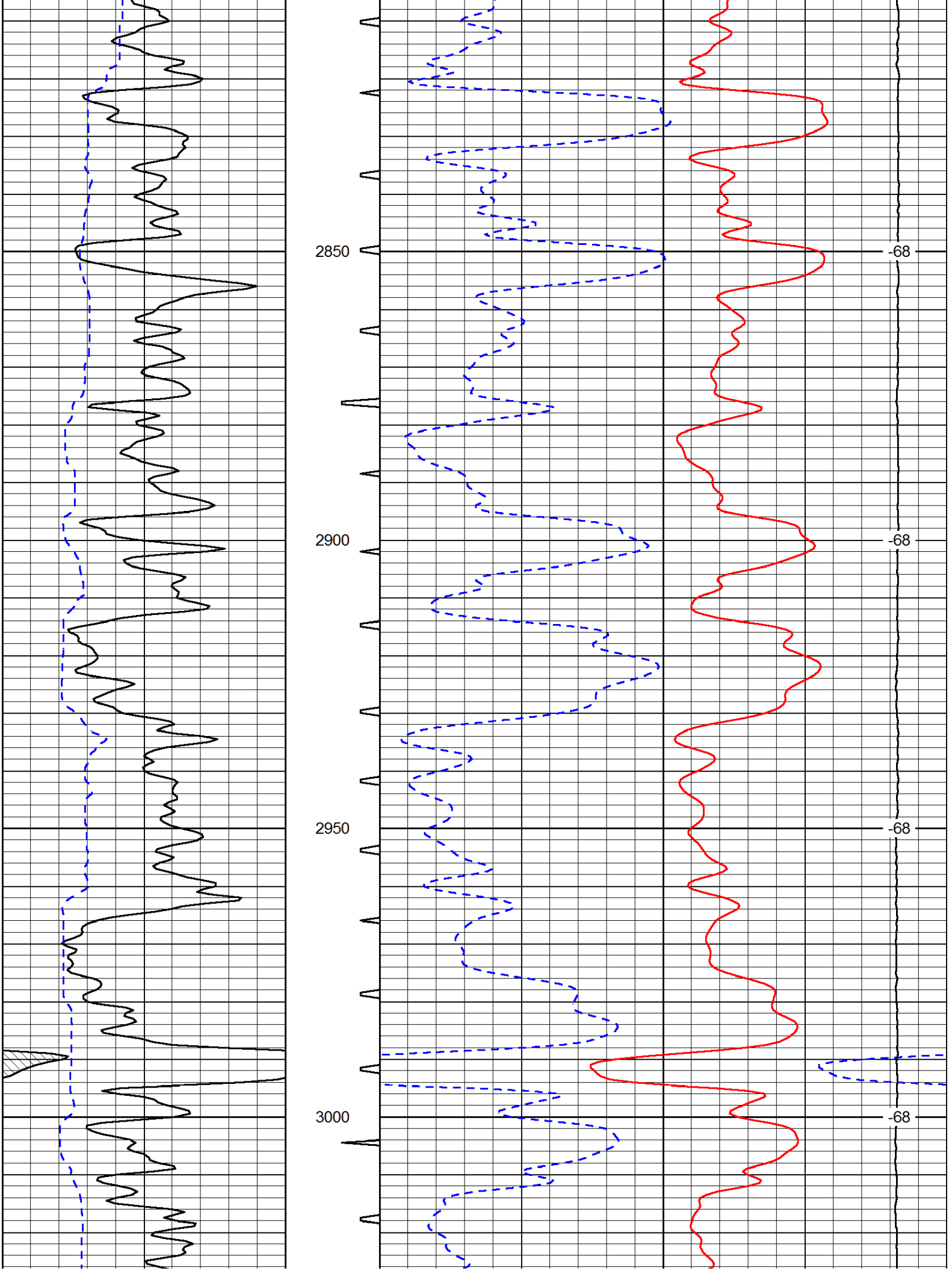

1750
1800
1850
1900
-68
-68
-68
-68

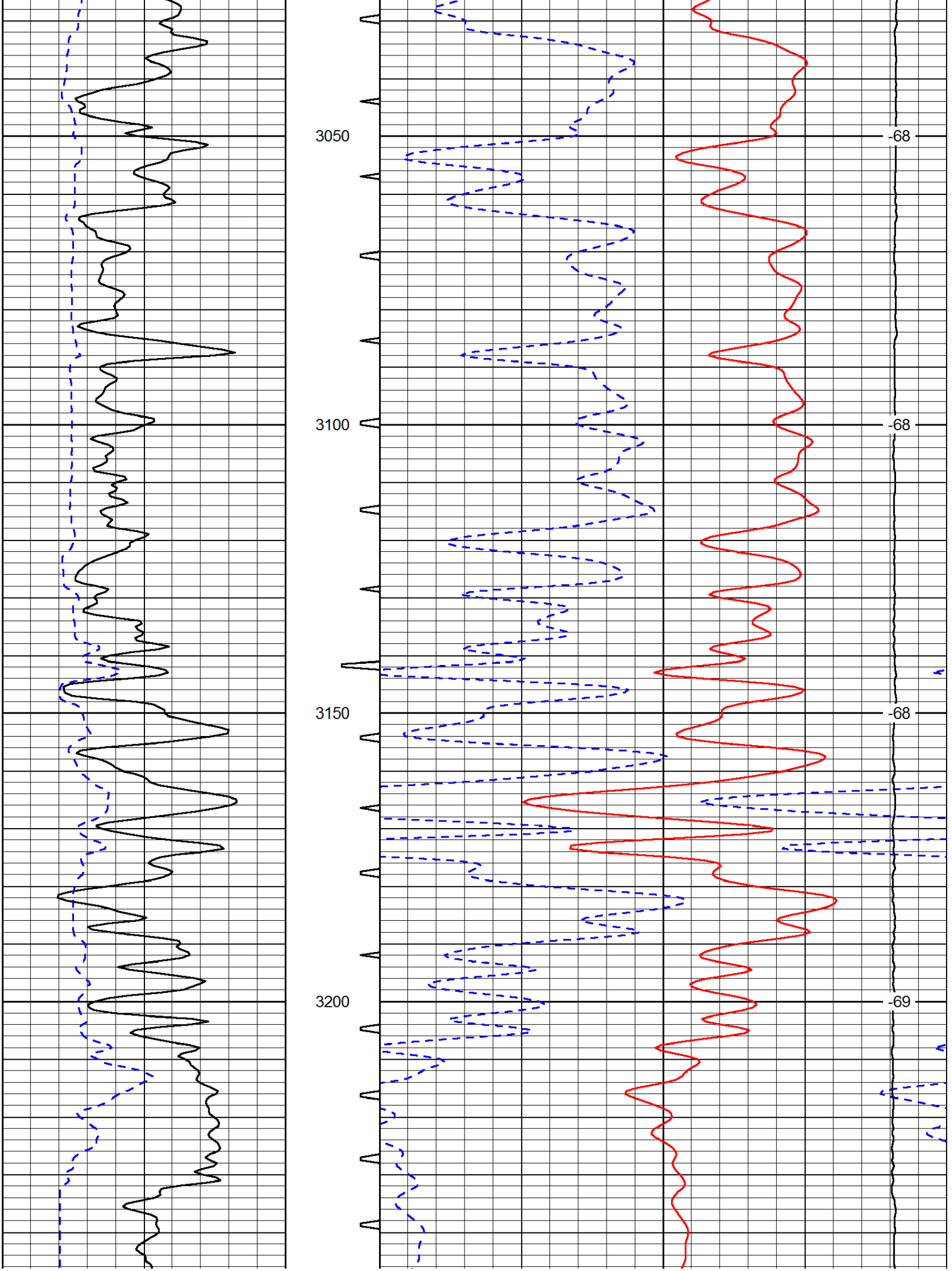

1950
2000
2050
2100
-68
-68
-66
-66

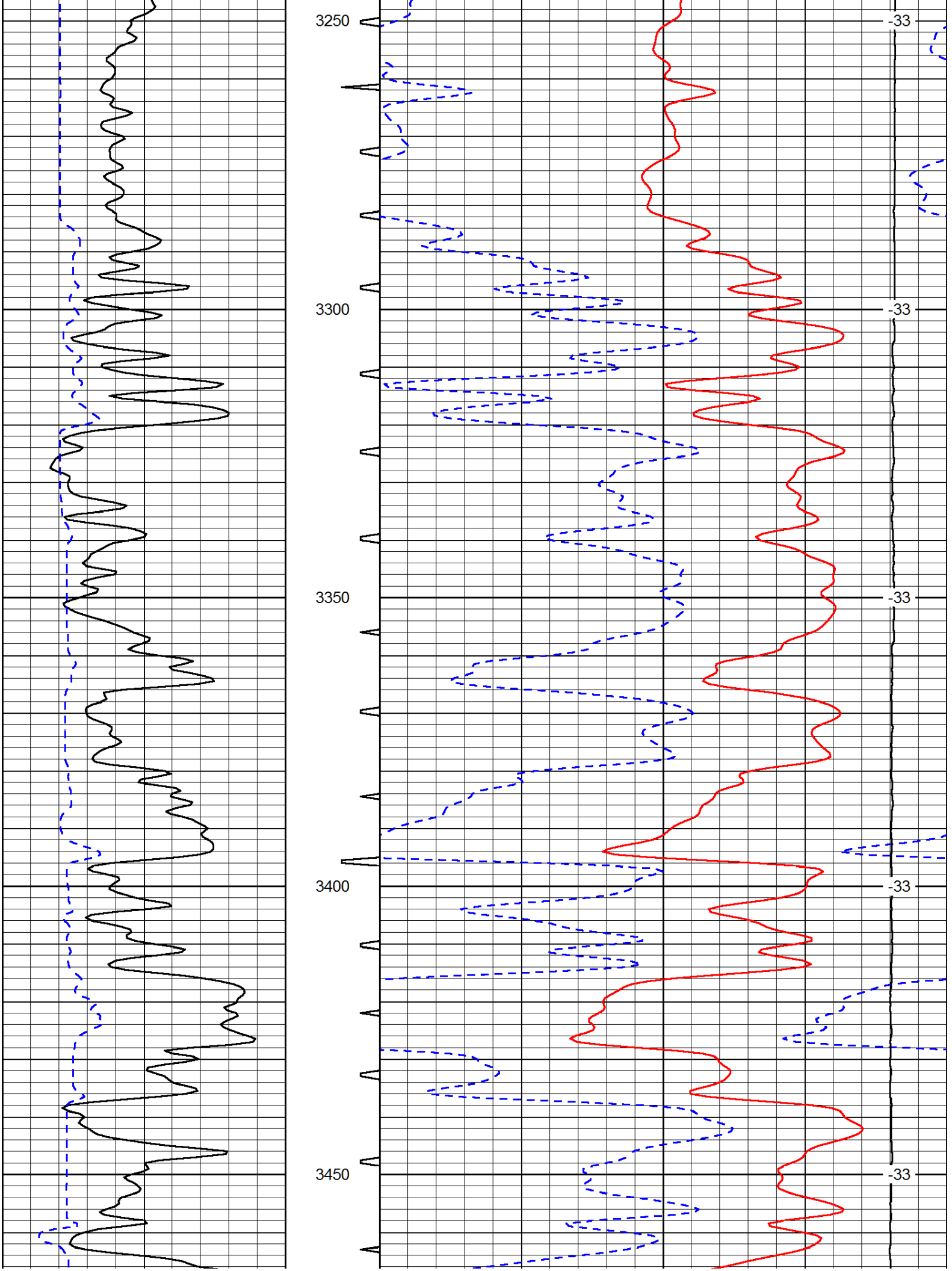

2150
2200
2250
2300
2350
-66
-66
-66
-66
-66

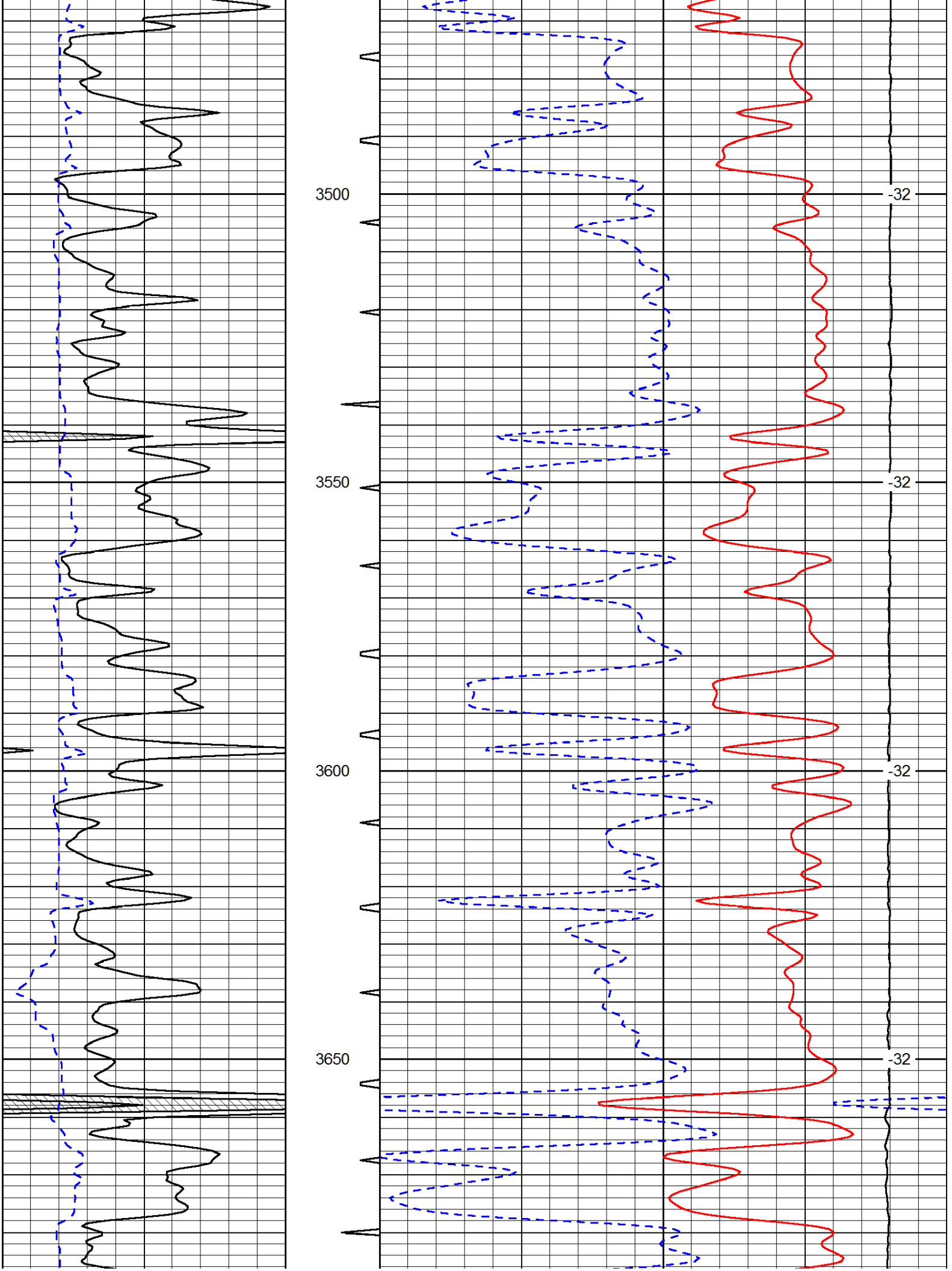

2400
2450
2500
2550
-66
-66
-66
-66

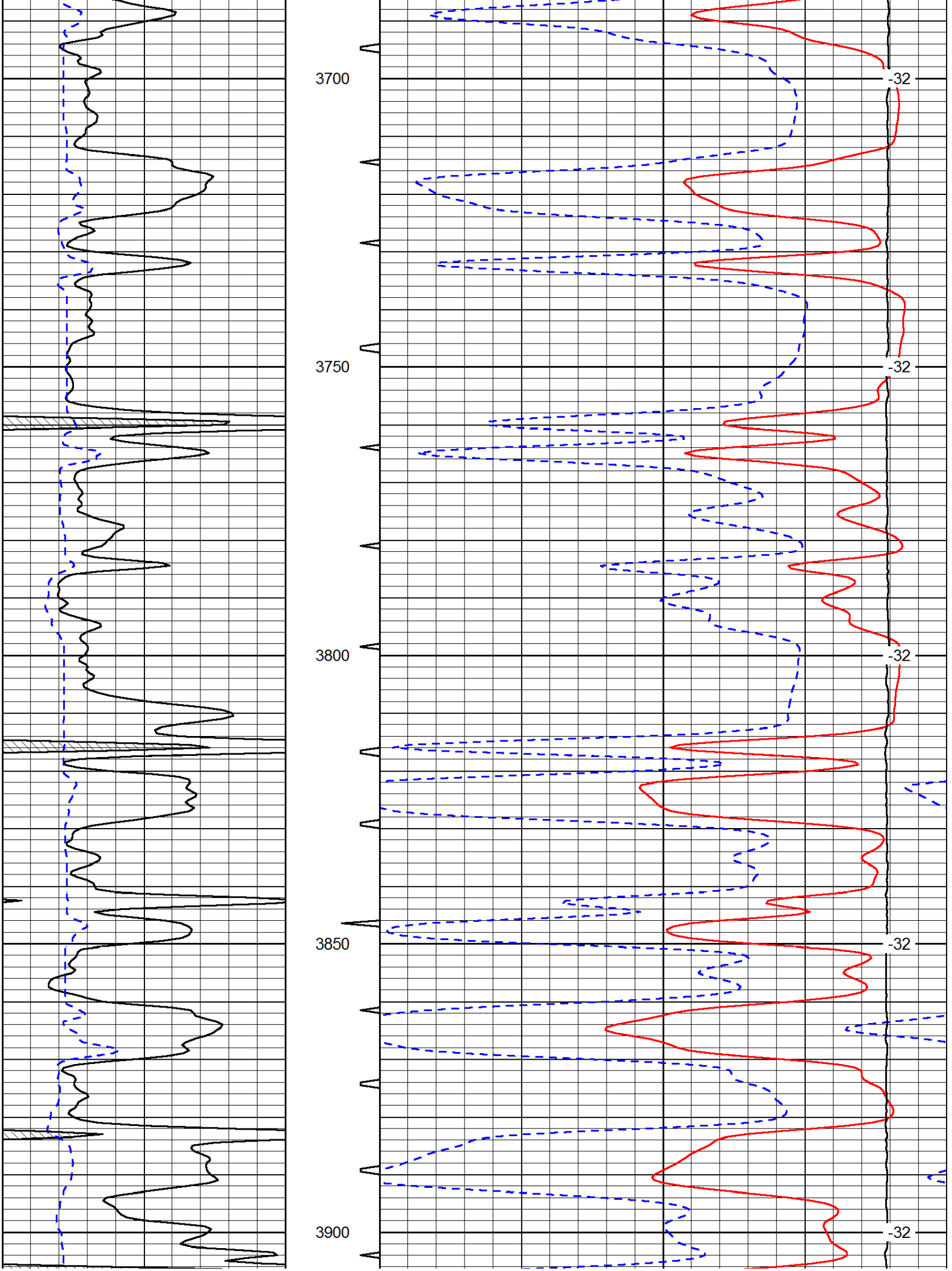

2600
2650
2700
2750
2800
-70
-70
-70
-68
-68

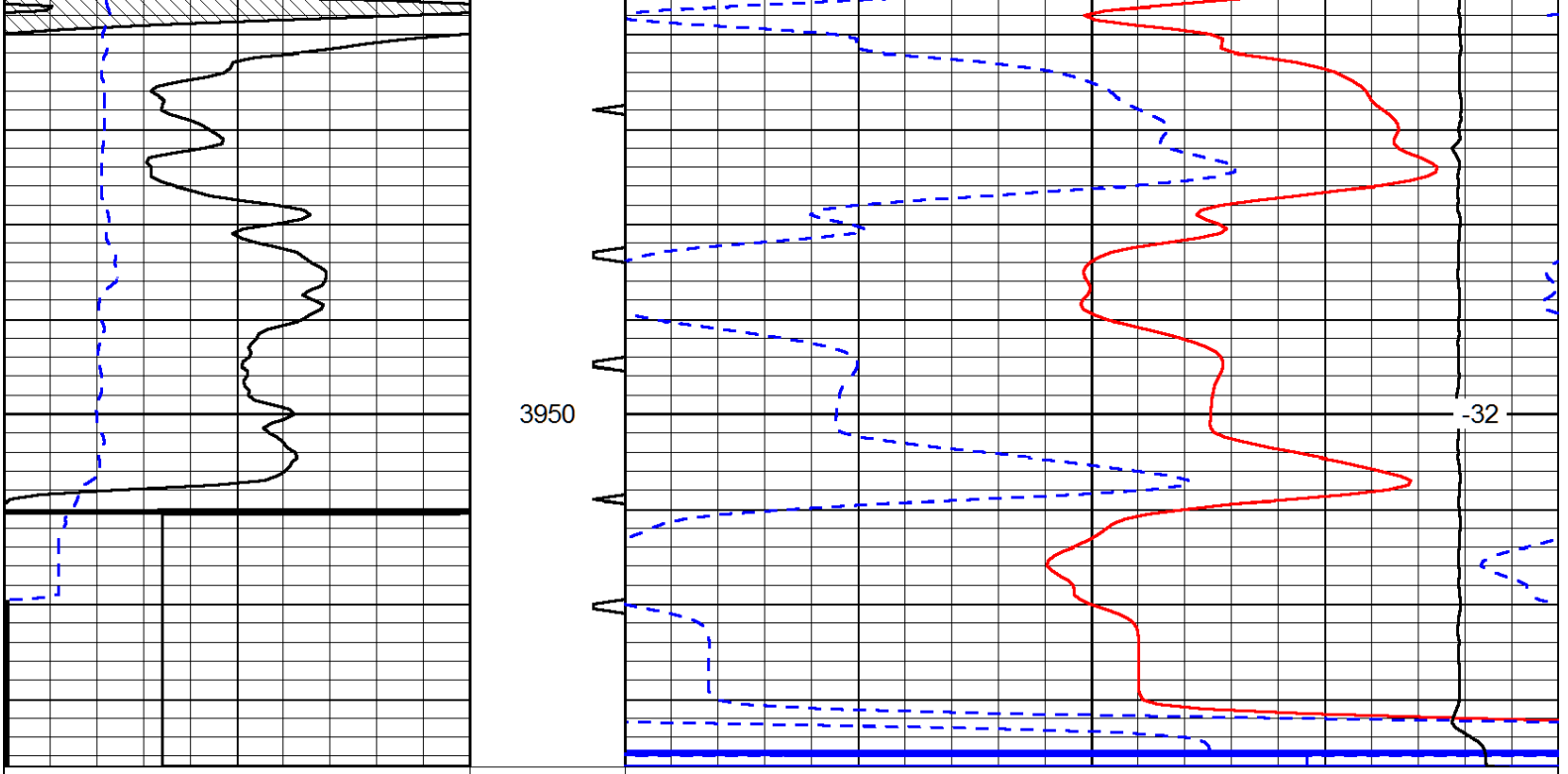

2850
2900
2950
3000
-68
-68
-68
-68


3050
3100
3150
3200
-68
-68
-68
-69


3250
3300
3350
3400
3450
-33
-33
-33
-33
-33


3500
3550
3600
3650
-32
-32
-32


3700
3750
3800
3850
3900
-32
-32
-32
-32
-32



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