



Pioneer Energy Services

Radiation Guard Log

API No.

15-065-23,970-00-00

Company Spiral Energy Corp., LLC

Well Kuehl No. 2

Field Cooper

County Graham State Kansas

Location

1320' FSL & 1980' FWL

Other Services
MEL

Sec: 34 Twp: 9S Rge: 21W

Permanent Datum Ground Level Elevation 2323
Log Measured From Kelly Bushing 7 Ft. Above Perm. Datum
Drilling Measured From Kelly Bushing

Elevation
K.B. 2330
D.F. 2323
G.L. 2323

Date 8/30/2013

Run Number One

Depth Driller 3955

Depth Logger 3955

Bottom Logged Interval 3954

Top Log Interval 200

Casing Driller 8.625 @ 222

Casing Logger 219

Bit Size 7.875

Type Fluid in Hole Chemical

Salinity, ppm CL 1,000

Density / Viscosity 9.2 58

pH / Fluid Loss 11.0 7.6

Source of Sample Flowline

Rm @ Meas. Temp .44 @ 90

Rmf @ Meas. Temp .33 @ 90

Rmc @ Meas. Temp .59 @ 90

Source of Rmf / Rmc Charts

Rm @ BHT .34 @ 116

Operating Rig Time 4 Hours

Max Rec. Temp. F 116

Equipment Number 15

Location Hays

Recorded By J. Henrickson

Witnessed By Bill Robinson

<<< Fold Here >>>

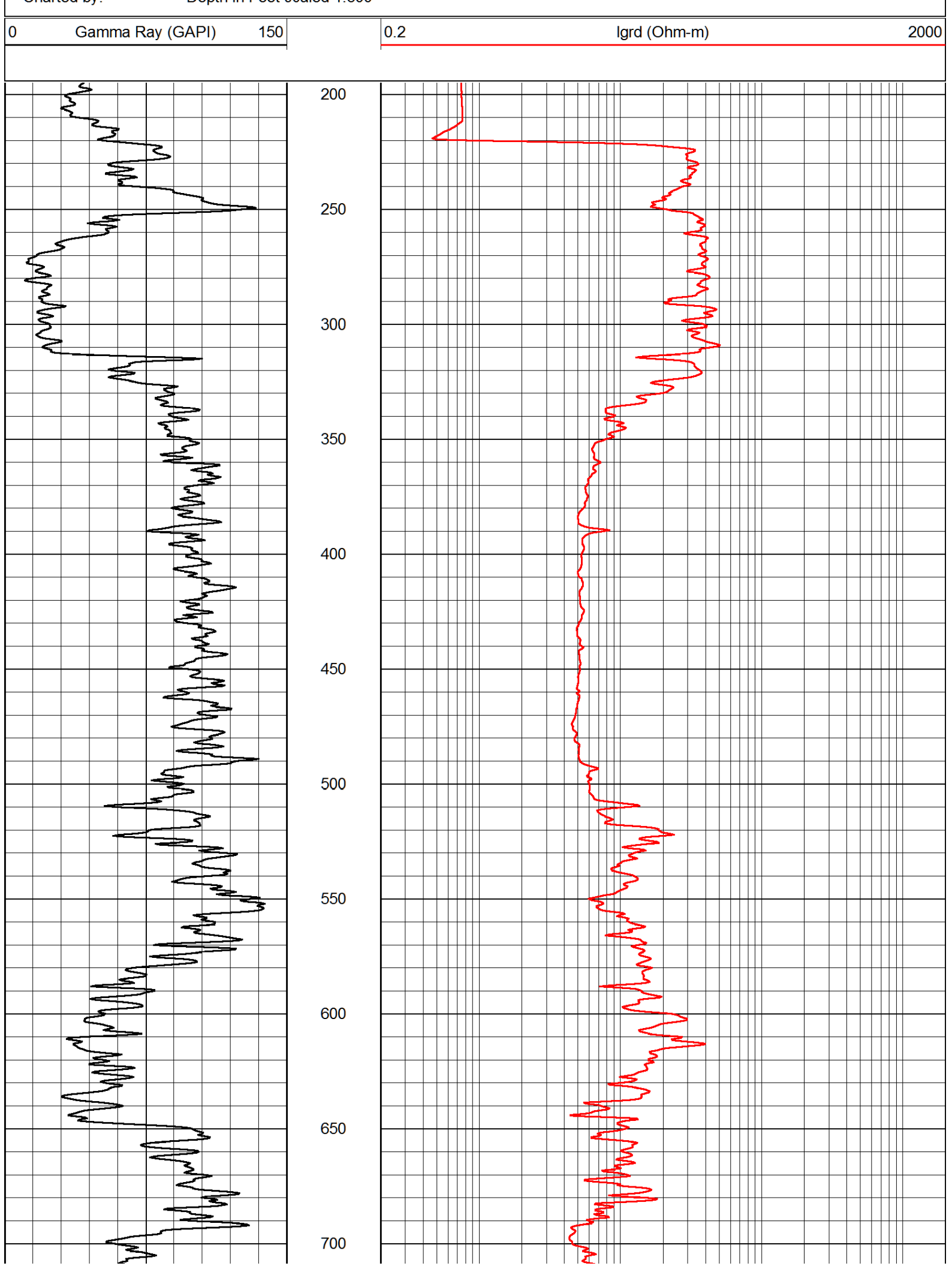
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

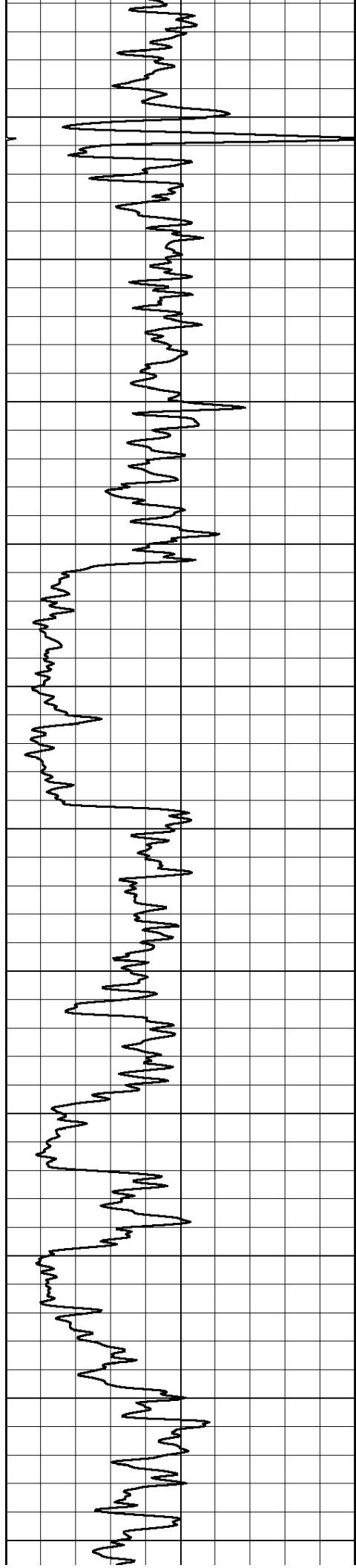
Comments

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

Palco Kansas
South to Y Rd, 4 West to Church, 1 South, 1/2 West, North Into

Database File: spiral_kueunl_2hd.db
Dataset Pathname: RAG/spirrag
Presentation Format: rag2in
Dataset Creation: Fri Aug 30 15:58:49 2013
Charted by: Depth in Feet scaled 1:600





750

800

850

900

950

1000

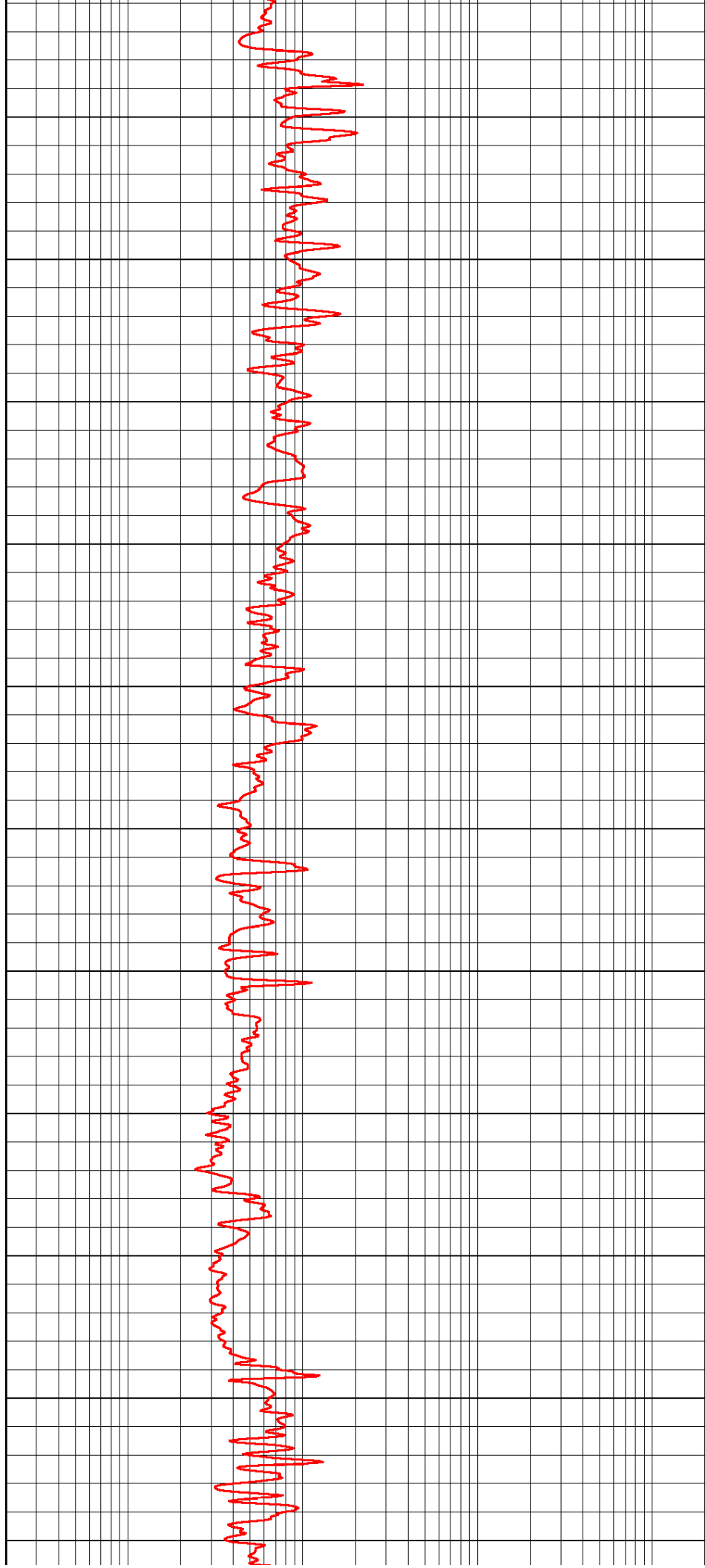
1050

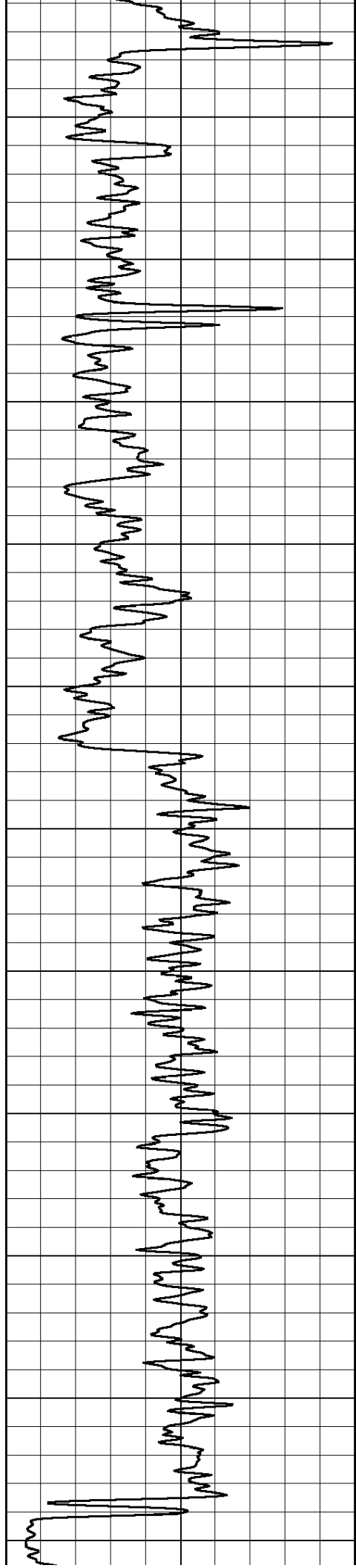
1100

1150

1200

1250





1300

1350

1400

1450

1500

1550

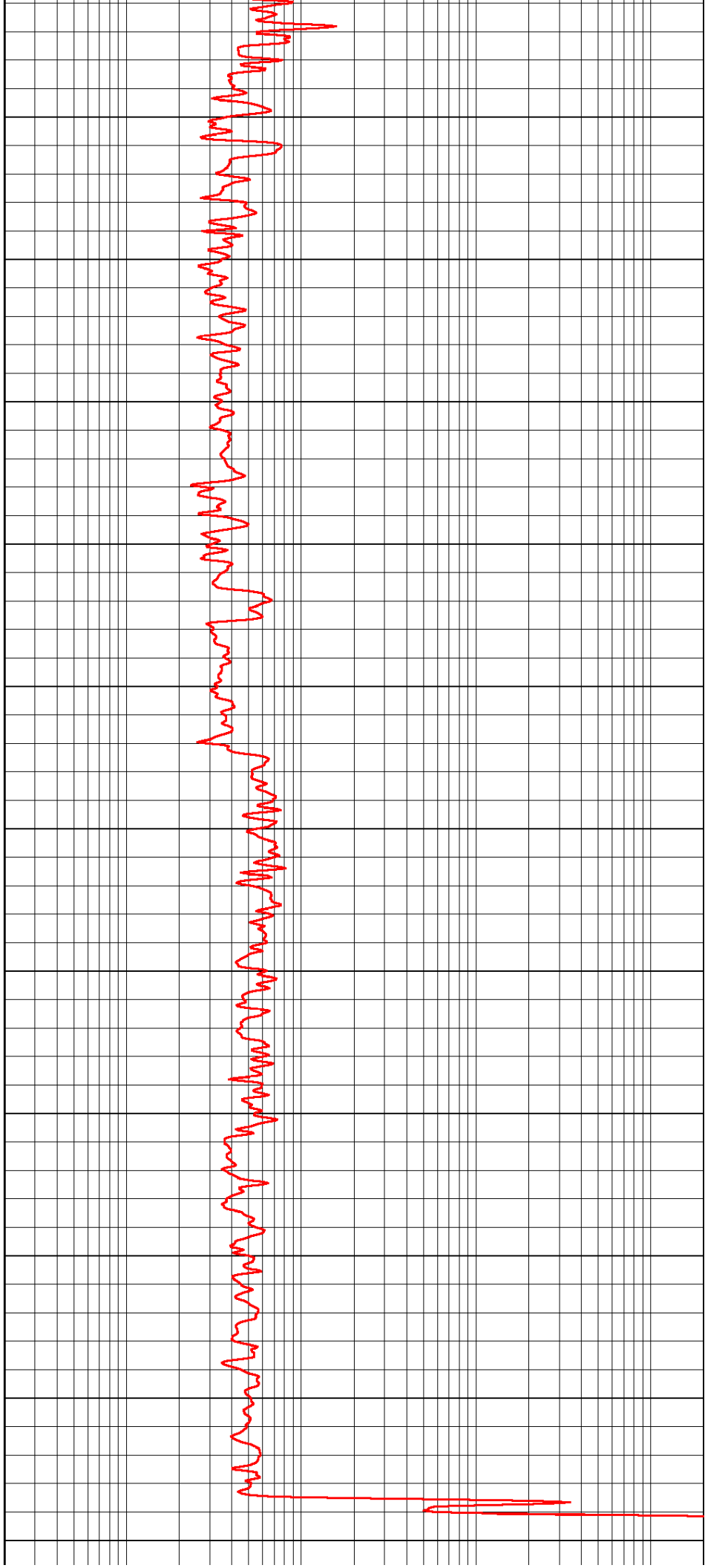
1600

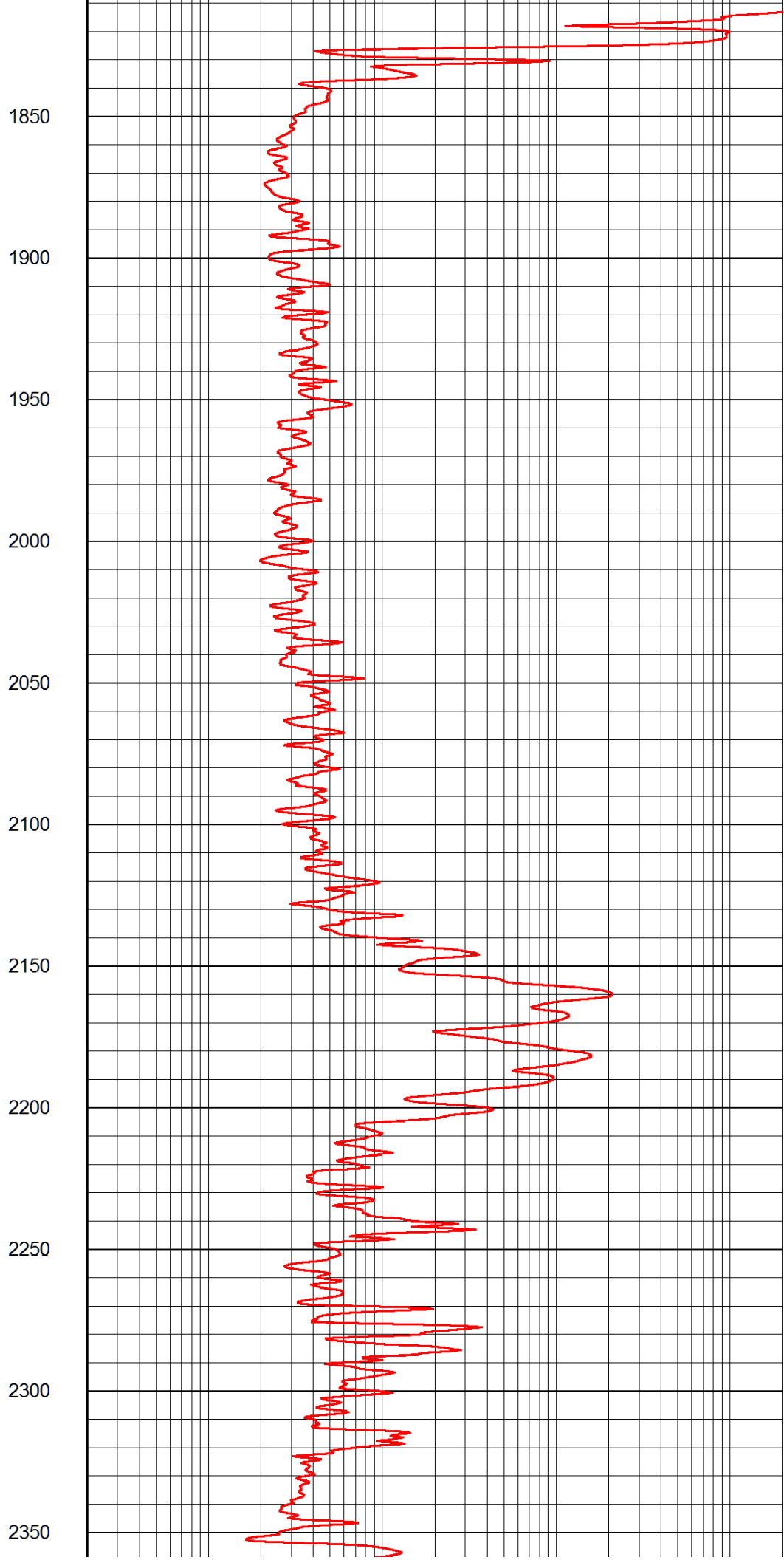
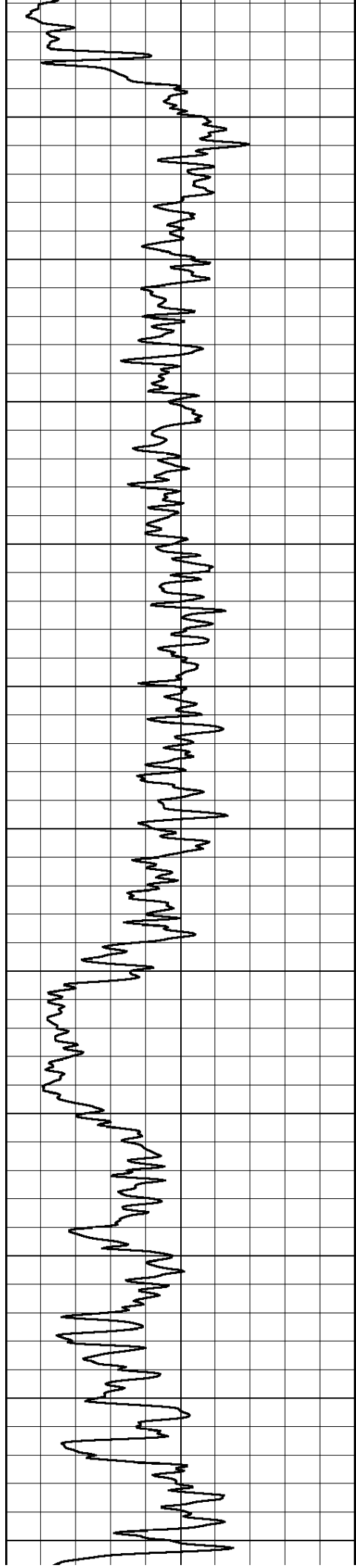
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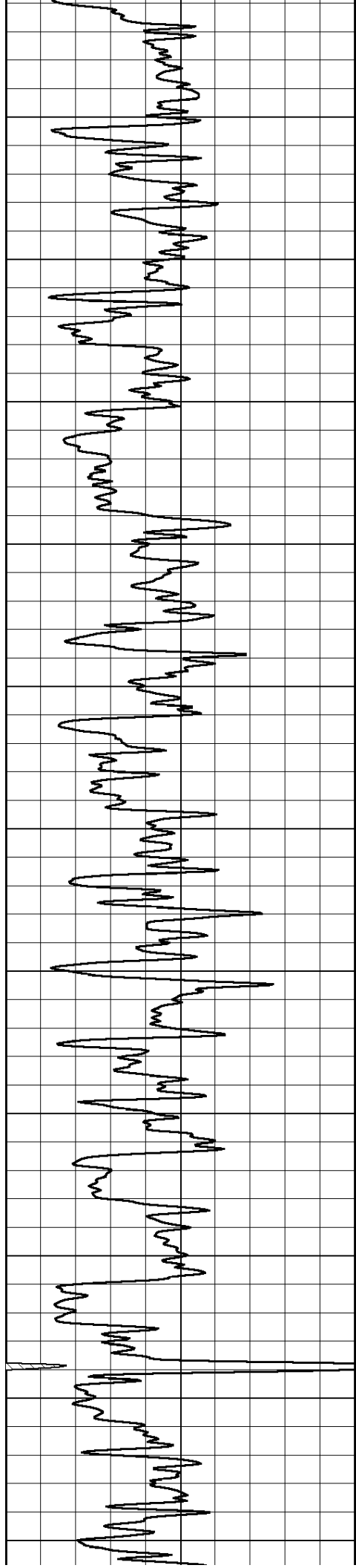
1700

1750

1800







2400

2450

2500

2550

2600

2650

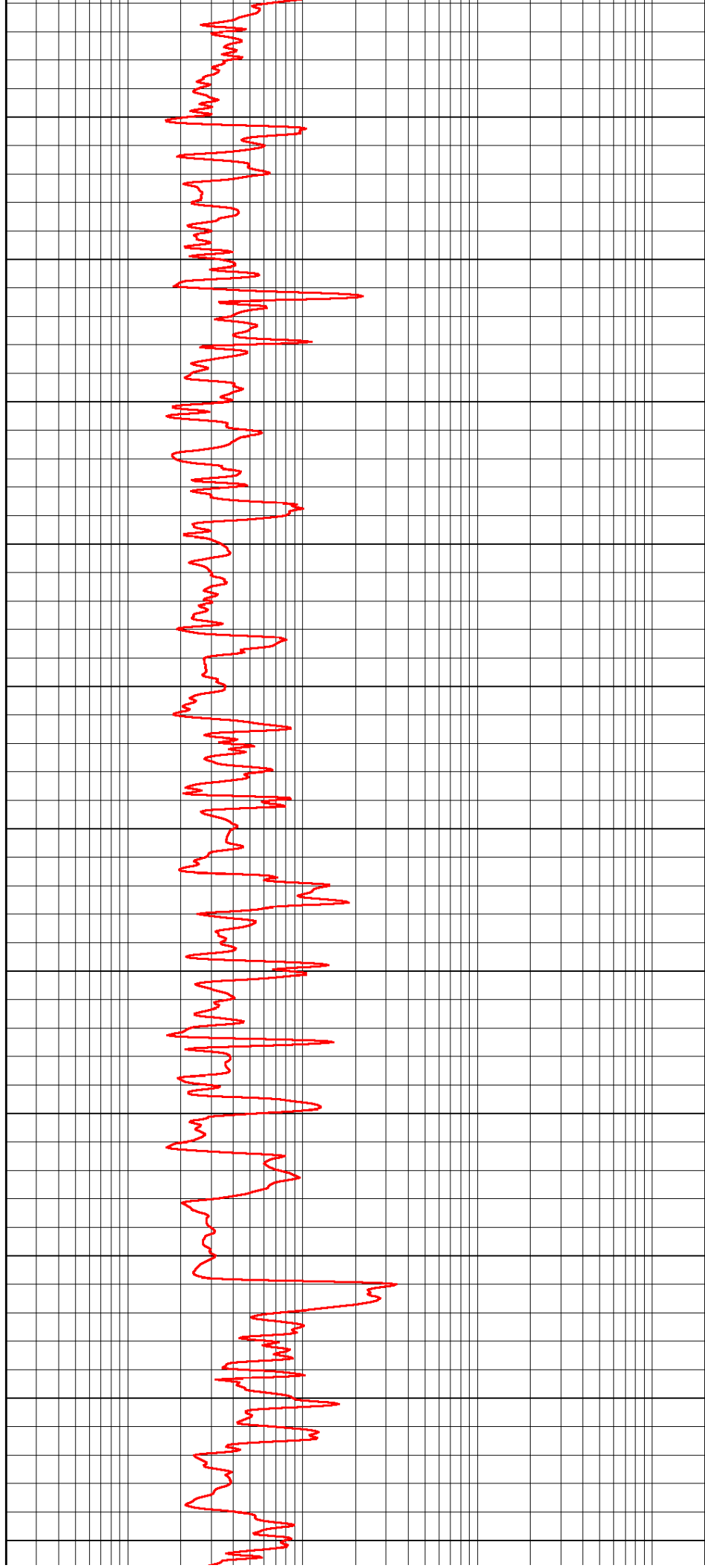
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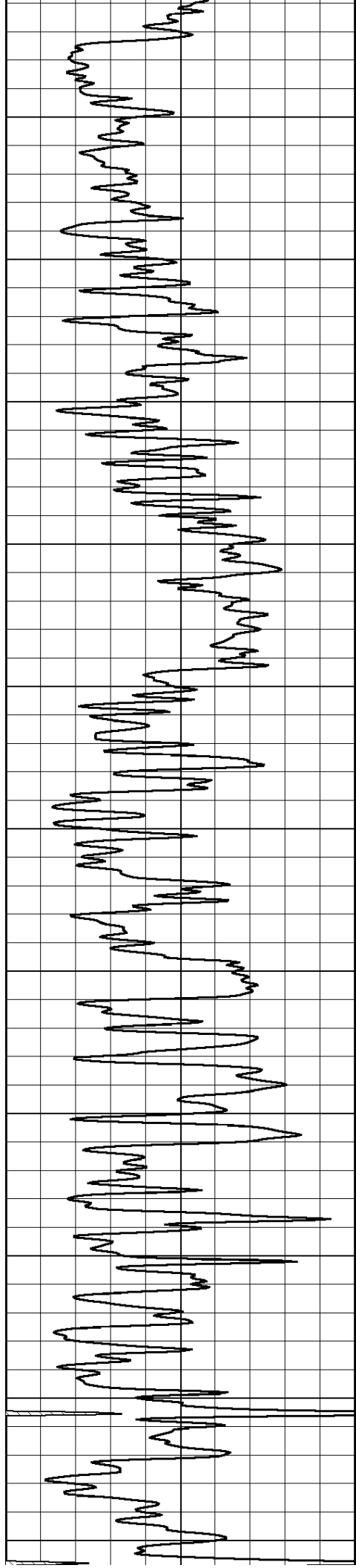
2750

2800

2850

2900





2950

3000

3050

3100

3150

3200

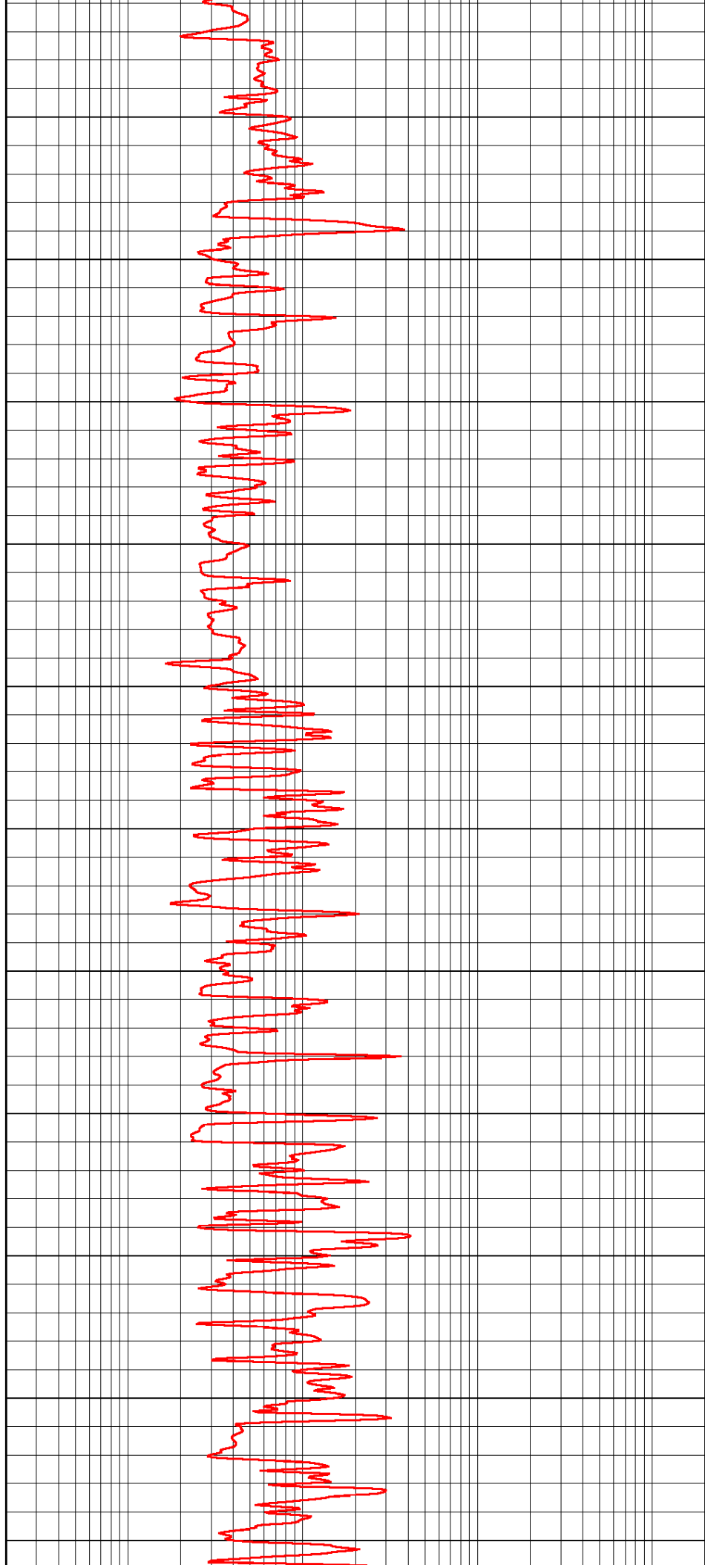
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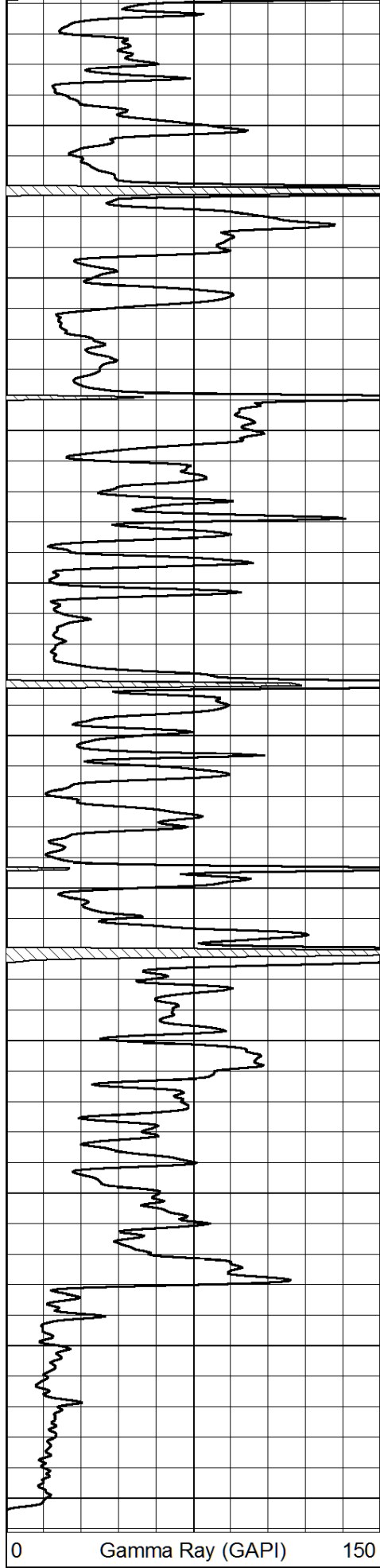
3300

3350

3400

3450





3500

3550

3600

3650

3700

3750

3800

3850

3900

3950

0

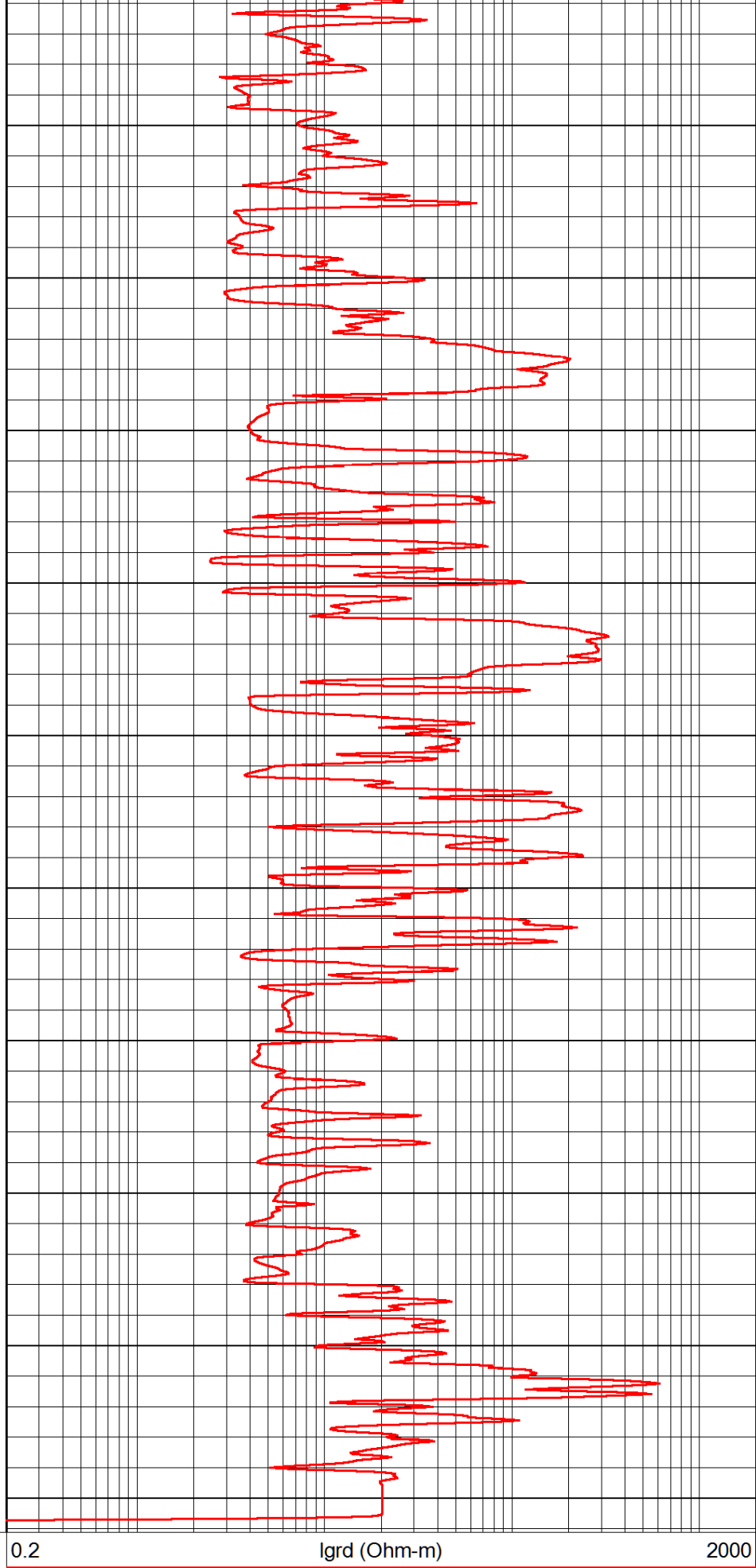
Gamma Ray (GAPI)

150

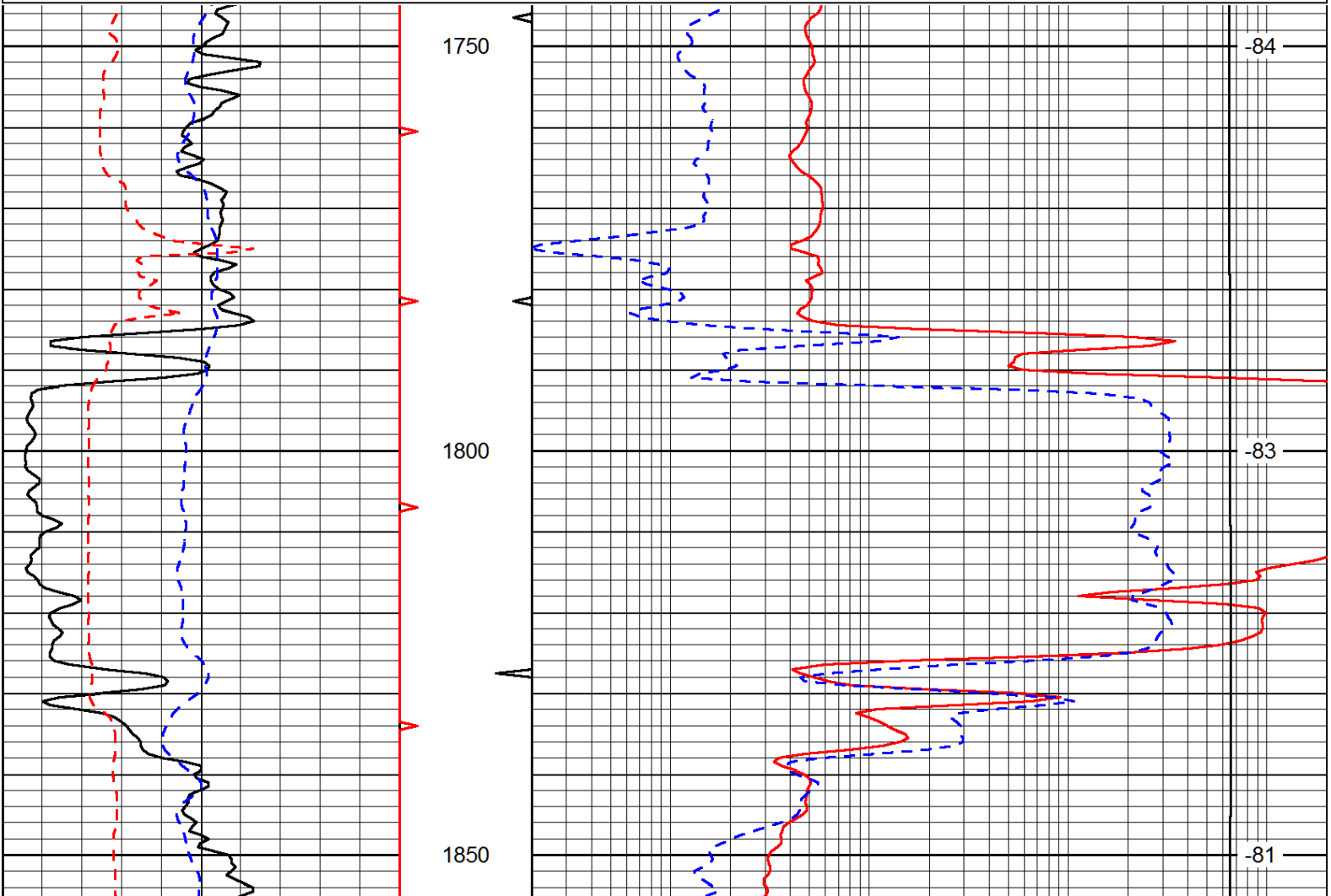
0.2

lgd (Ohm-m)

2000



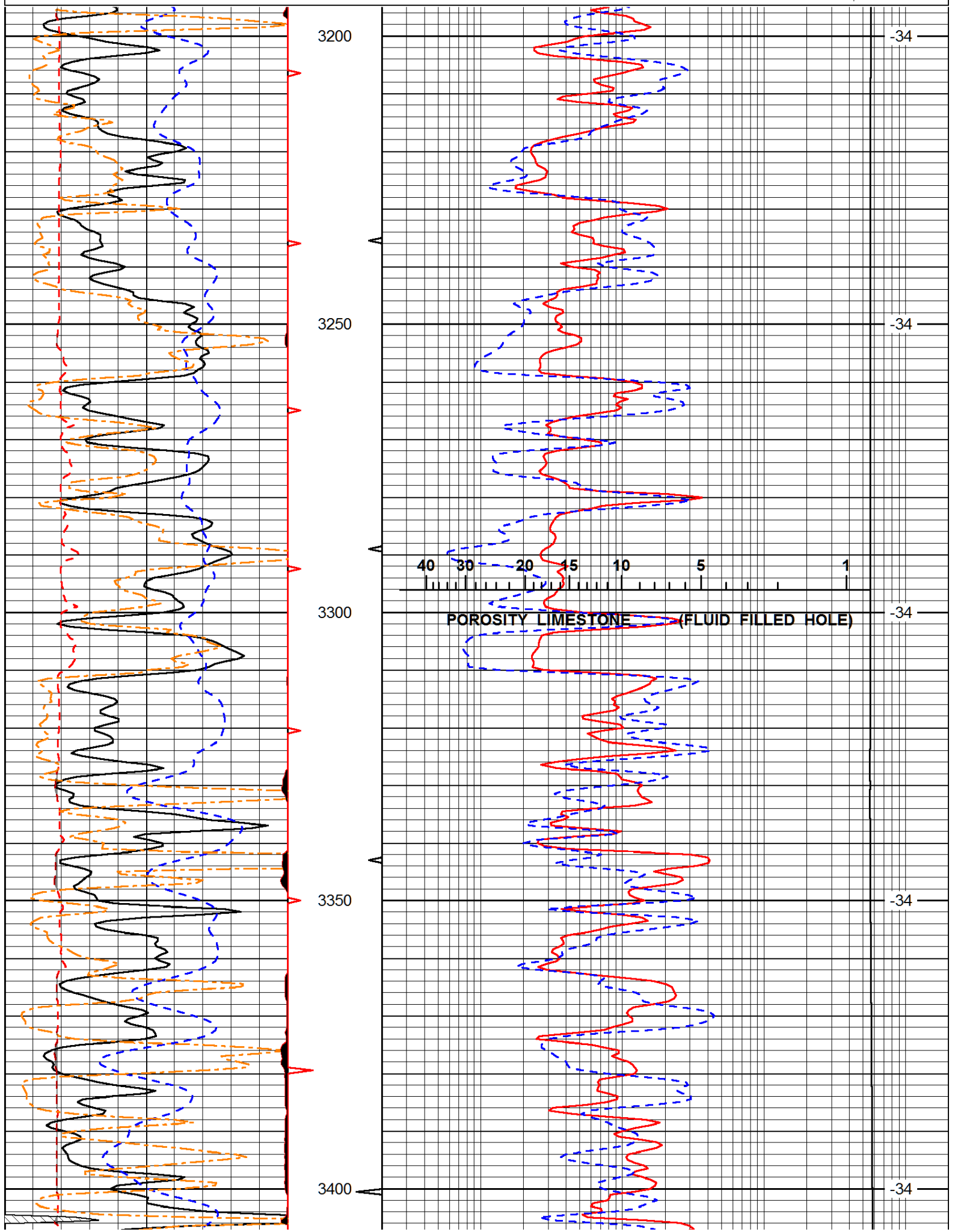
Database File: spiral_kueunl_2hd.db			Dataset Pathname: RAG/spirrag		
Presentation Format: rag			Dataset Creation: Fri Aug 30 15:58:49 2013		
Charted by:			Depth in Feet scaled 1:240		
0	Gamma Ray (GAPI)	150	0.2	LGRD (Ohm-m)	2000
6	SCAL (in)	16	560	SWNC (NAPI)	2160
-200	sp (mV)	0	15000	Line Tension (lb)	0
0	RWA (Ohm-m)	0.5	LSPD (ft/min)		

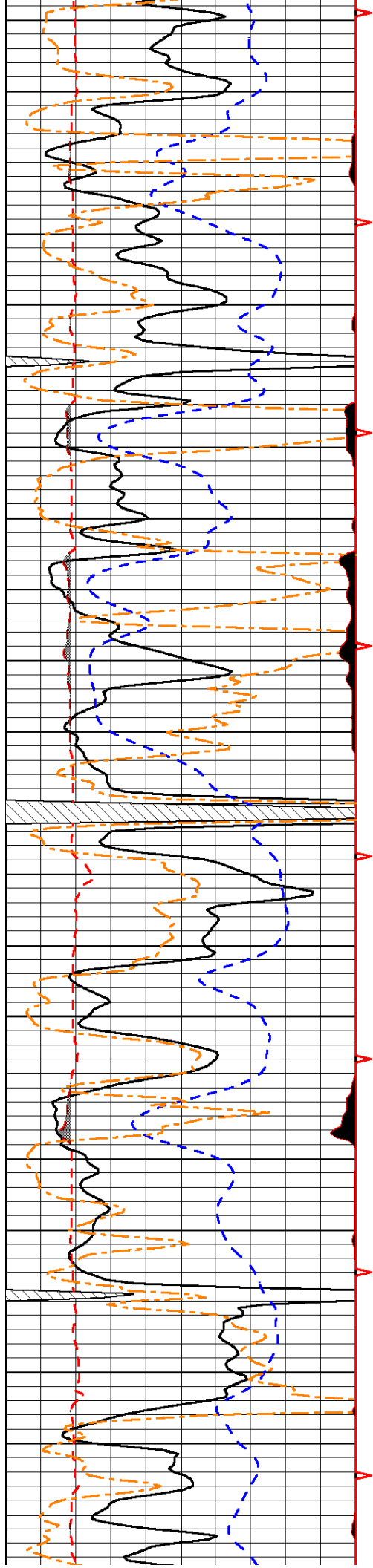


0	Gamma Ray (GAPI)	150	0.2	LGRD (Ohm-m)	2000
6	SCAL (in)	16	560	SWNC (NAPI)	2160
-200	sp (mV)	0	15000	Line Tension (lb)	0
0	RWA (Ohm-m)	0.5	LSPD (ft/min)		

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0	RWA (Ohm-m)	0.5	LSPD		

(ft/min)



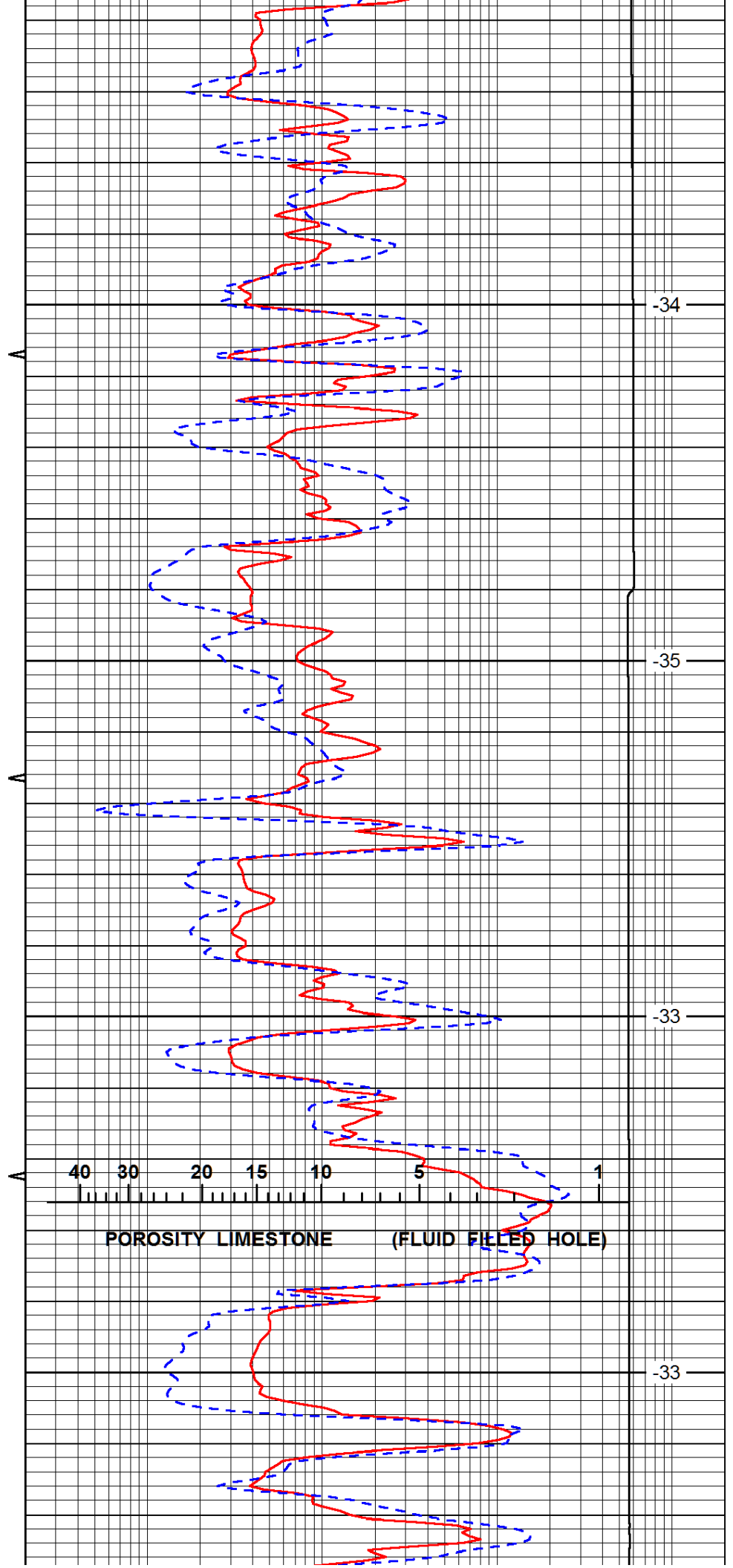


3450

3500

3550

3600



-34

-35

-33

-33

40 30 20 15 10 5 1

POROSITY LIMESTONE (FLUID FILLED HOLE)

