



Radiation Guard Log

Pioneer Energy Services

API No.

15-101-22462-00-00

Company Northern Lights Oil Company, LLC

Well Keenan # 2

Field McWhirter

County Lane State Kansas

Location

1364' FNL & 1665' FEL

Other Services

NONE

Sec: 3 Twp: 19 S Rge: 29 W

Permanent Datum

Ground Level

Elevation 2815

Log Measured From Kelly Bushing 5 Ft. Above Perm. Datum

K.B. 2820
D.F. 2815
G.L. 2815

Drilling Measured From Kelly Bushing

Elevation 2815

K.B. 2820
D.F. 2815
G.L. 2815

Date 10-11-2013

Run Number One

Depth Driller 4655

Depth Logger 4656

Bottom Logged Interval 4655

Top Log Interval 350

Casing Driller 8.625 @ 385

Casing Logger N/A

Bit Size 7.875

Type Fluid in Hole Chemical

Salinity, ppm CL 3000

Density / Viscosity 9.2 56

pH / Fluid Loss 9.0 8.2

Source of Sample Flowline

Rm @ Meas. Temp 1.2 @ 74

Rmf @ Meas. Temp 0.9 @ 74

Rmc @ Meas. Temp 1.62 @ 74

Source of Rmf / Rmc Charts

Rm @ BHT 0.71 @ 125

Operating Rig Time 3 Hours

Max Rec. Temp. F 125

Equipment Number 91

Location Hays

Recorded By Y. Ruiz

Witnessed By Seth Evenson

<<< Fold Here >>>

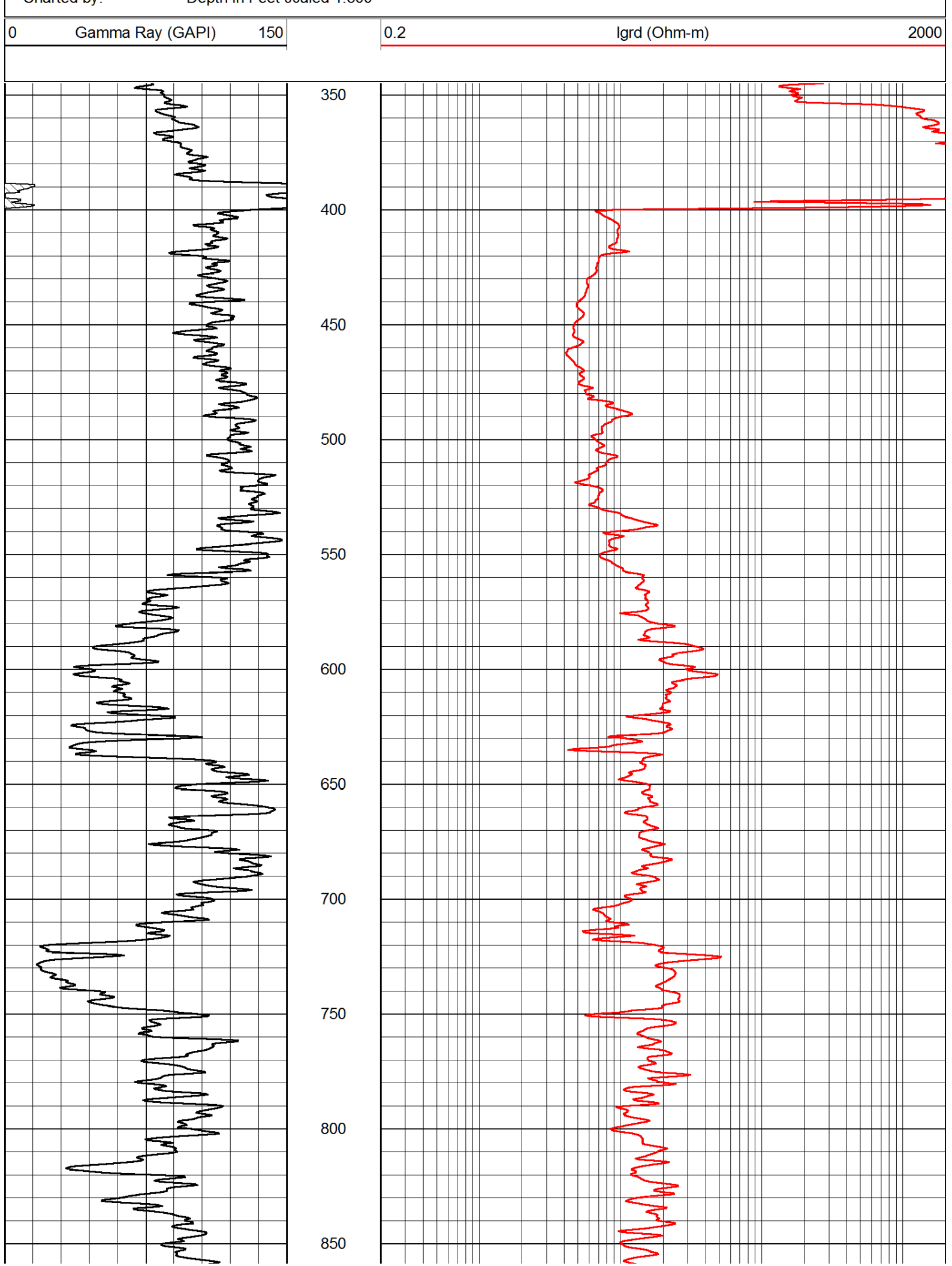
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

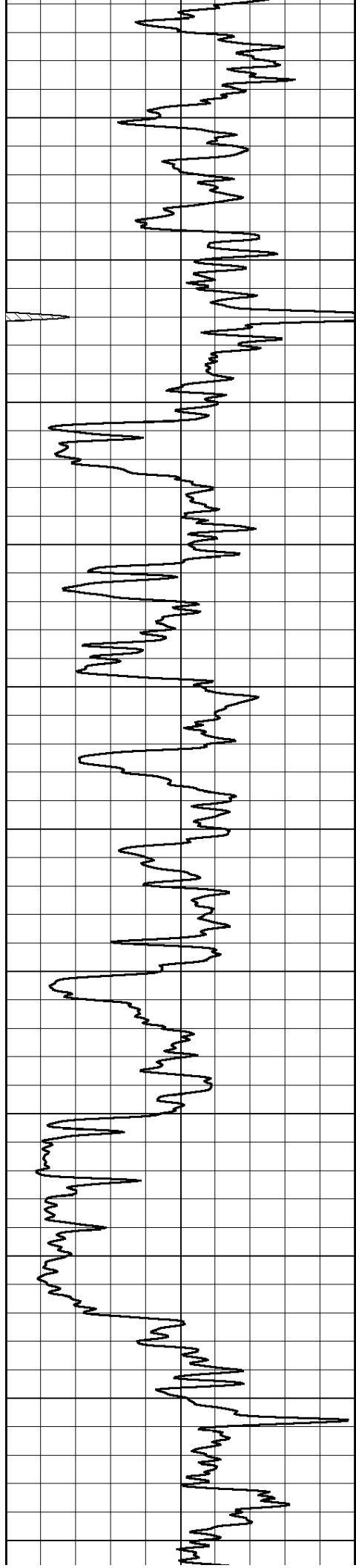
Comments

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

Dighton,
2 South to 130 Rd, 2 West to Jagger Rd, 1 1/2 South,
West into

Database File: northern_101113hd.db
Dataset Pathname: rag/@00000e60
Presentation Format: rag2in
Dataset Creation: Sat Oct 12 02:28:42 2013
Charted by: Depth in Feet scaled 1:600





900

950

1000

1050

1100

1150

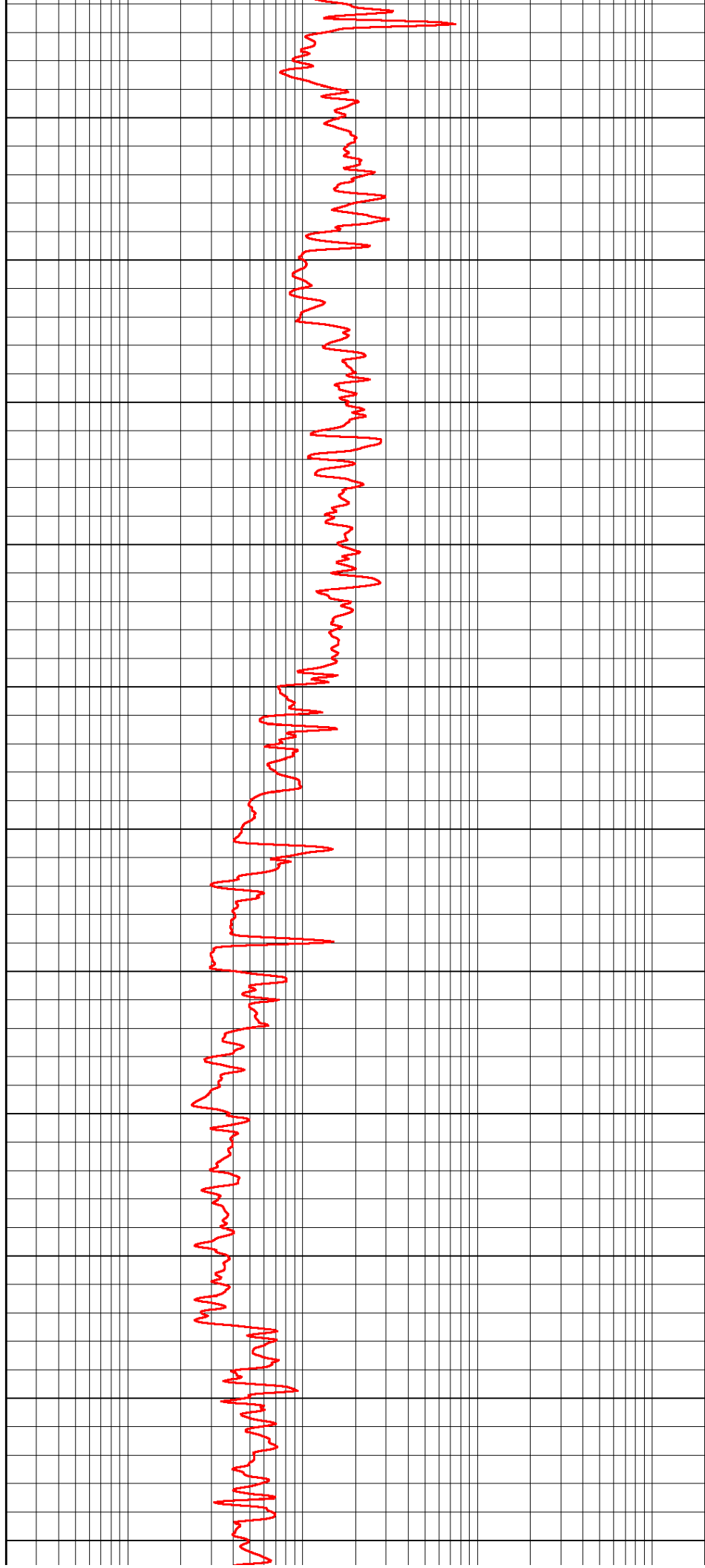
1200

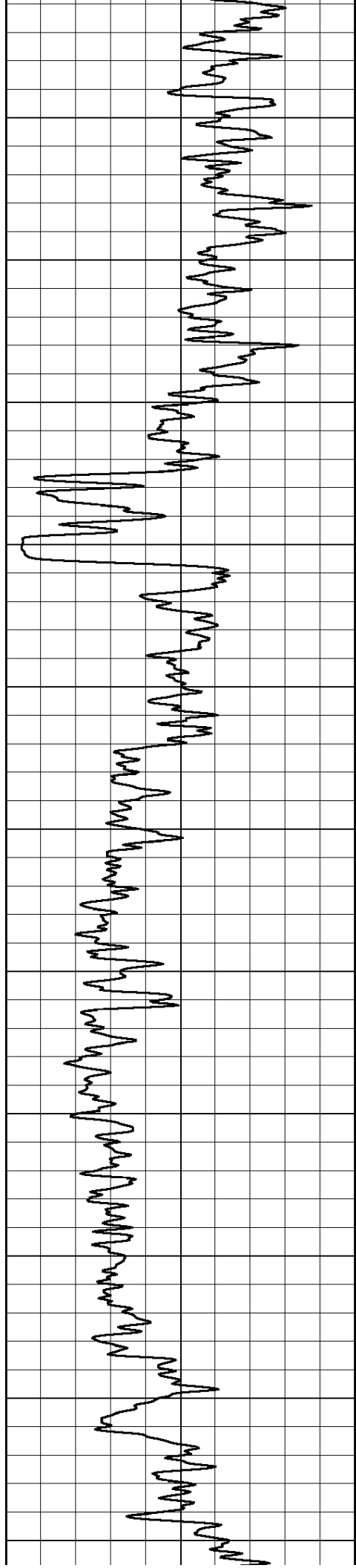
1250

1300

1350

1400





1450

1500

1550

1600

1650

1700

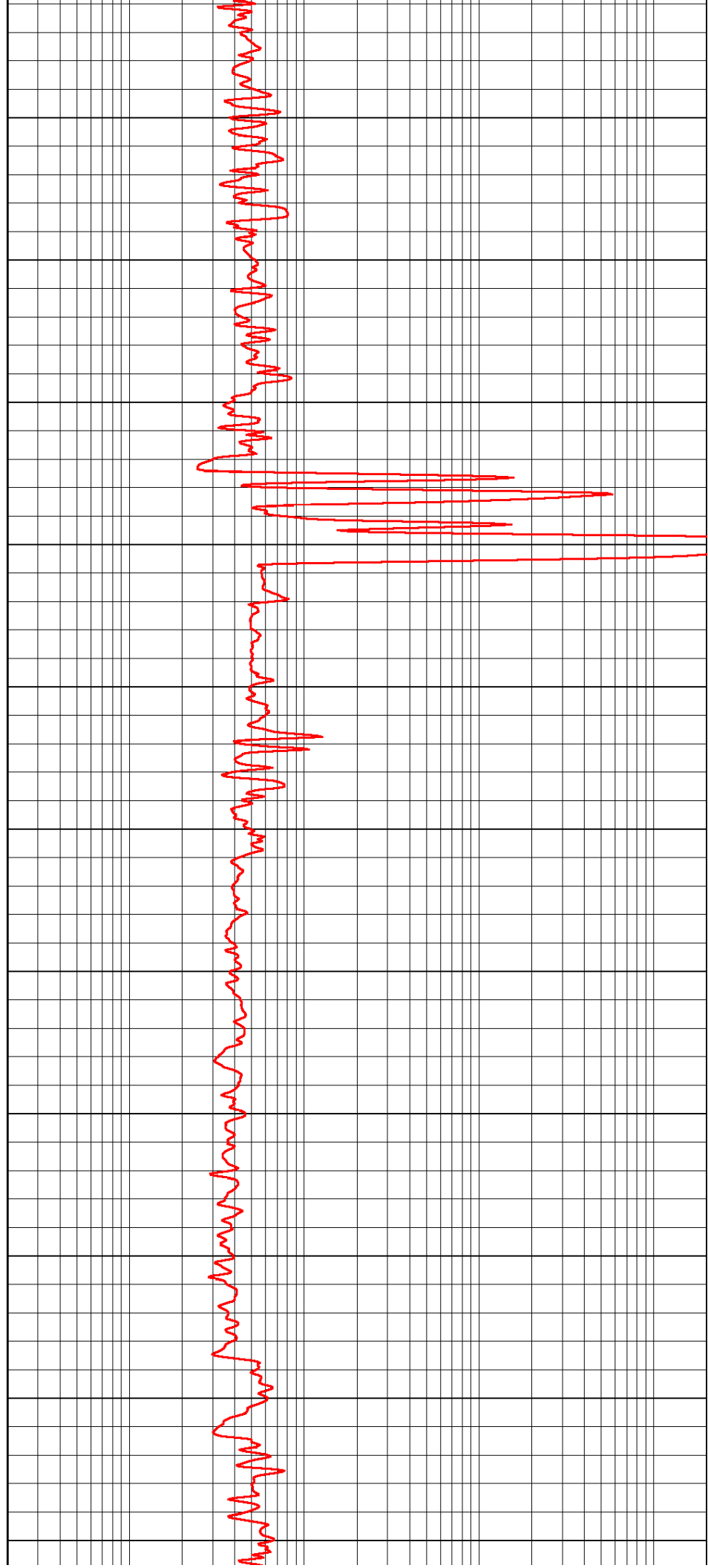
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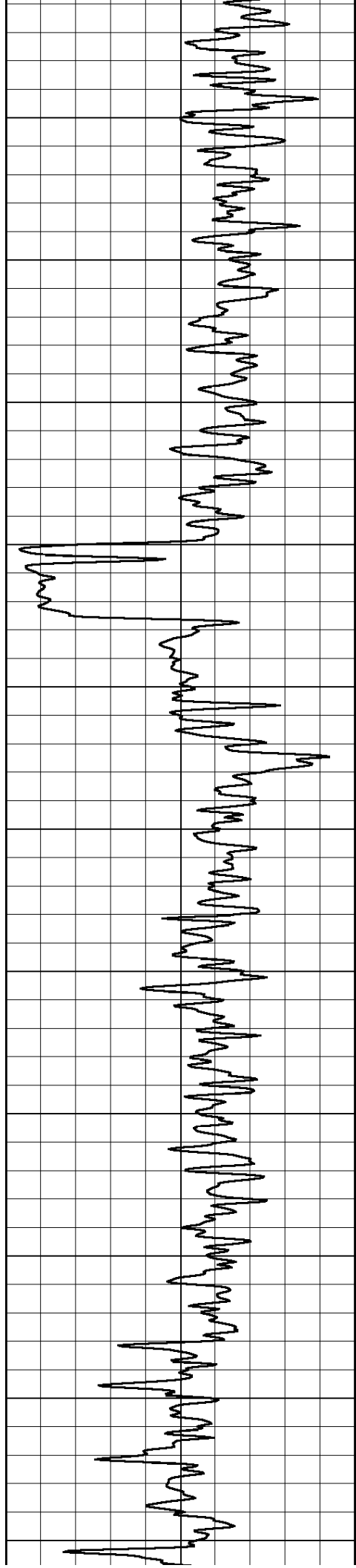
1800

1850

1900

1950





2000

2050

2100

2150

2200

2250

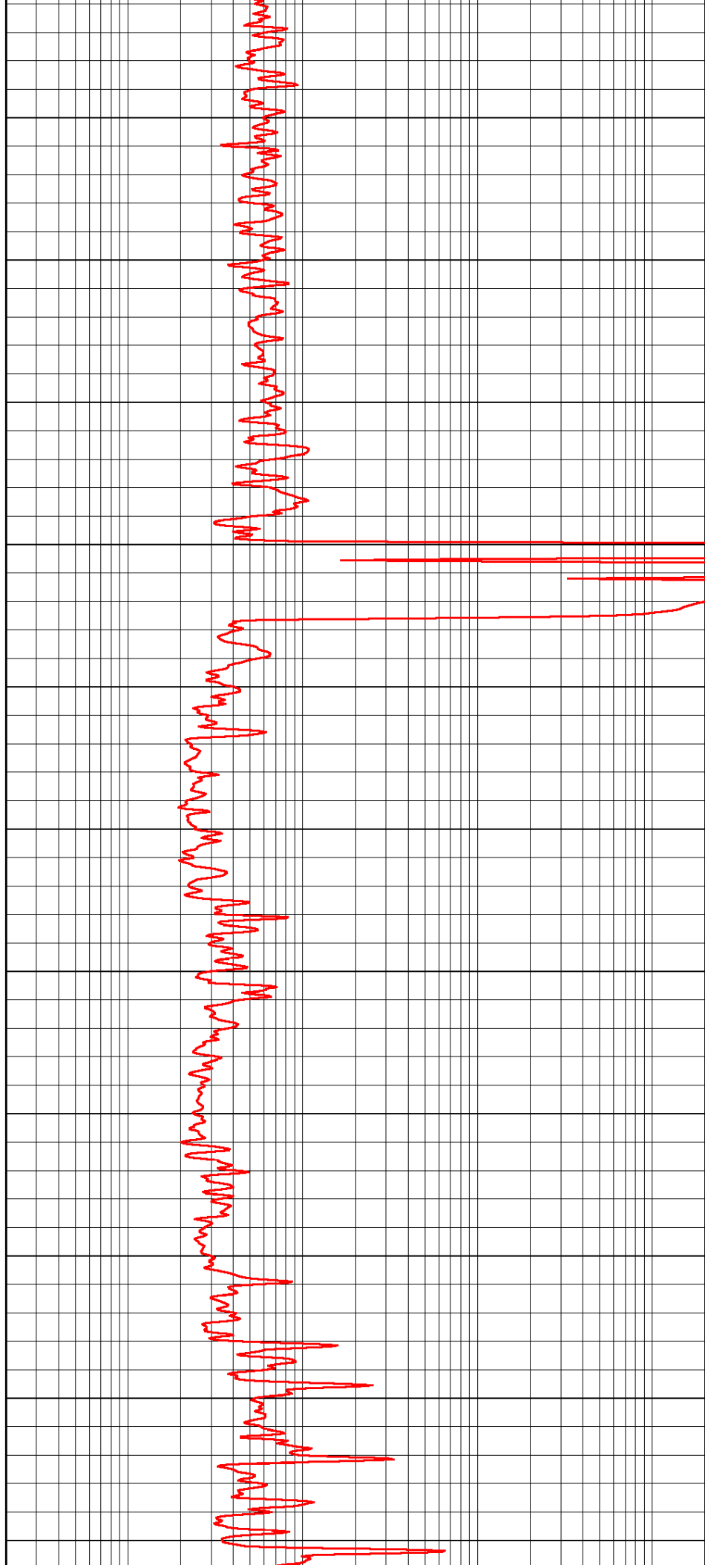
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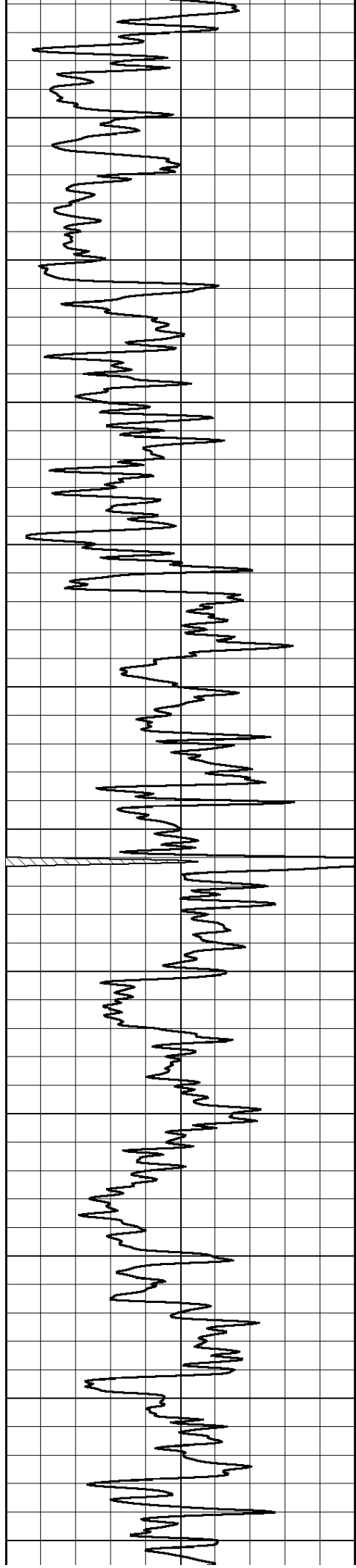
2350

2400

2450

2500





2550

2600

2650

2700

2750

2800

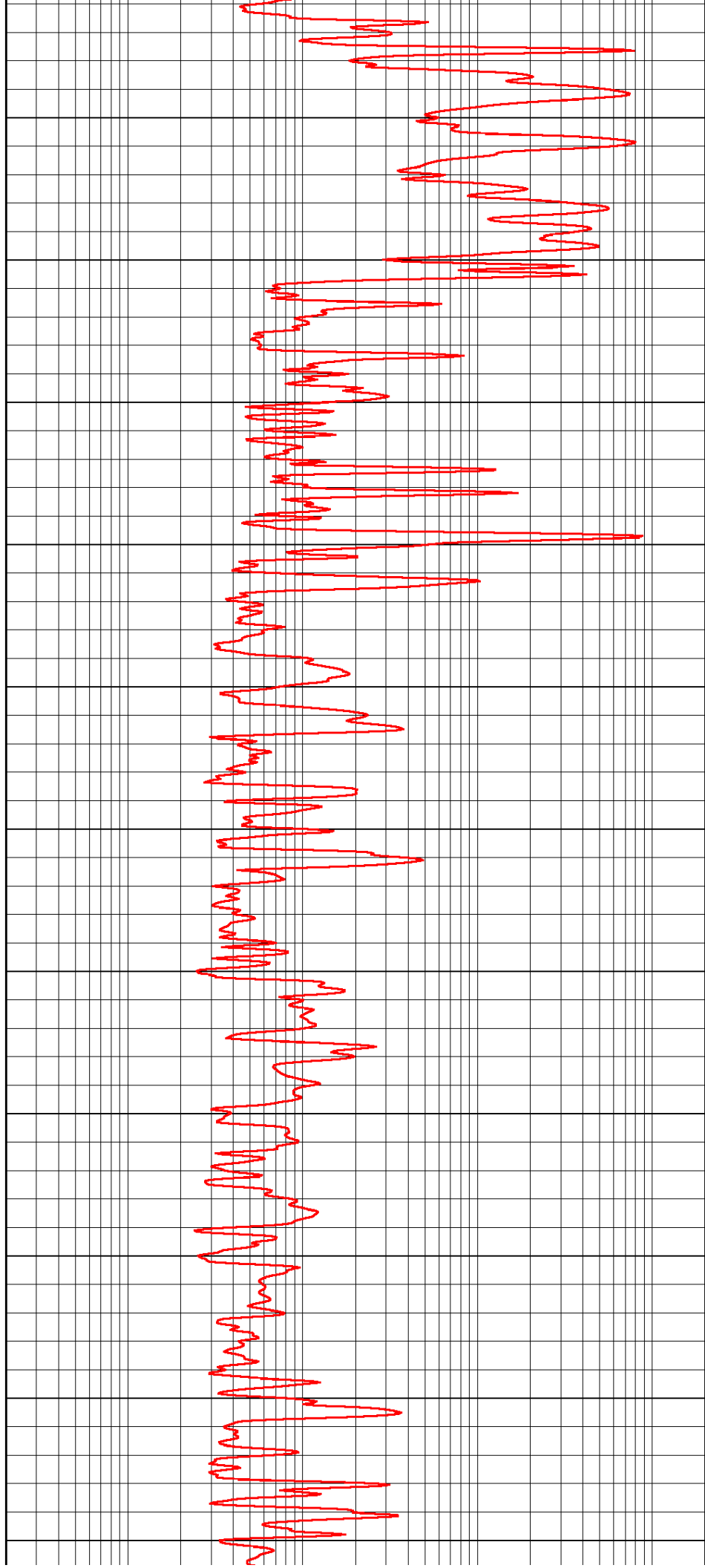
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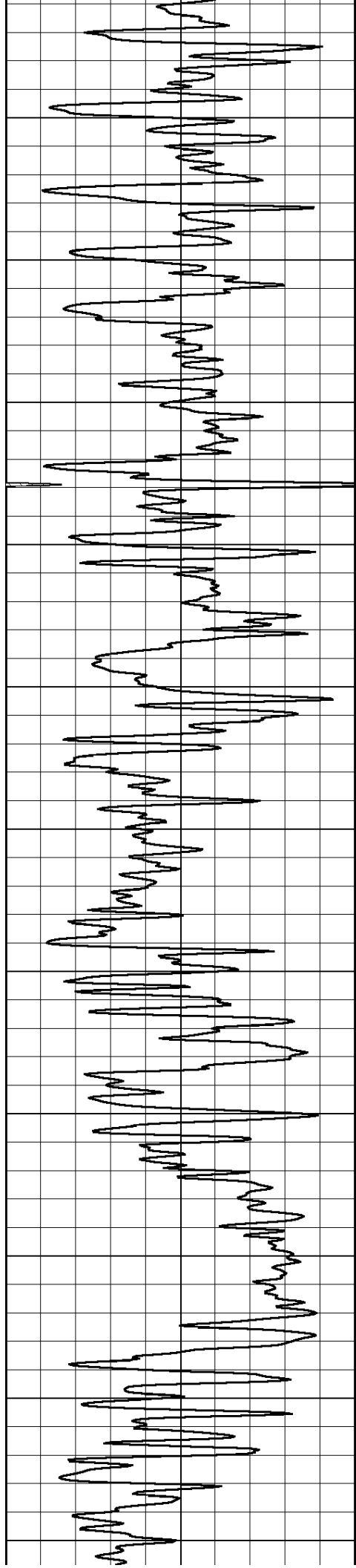
2900

2950

3000

3050





3100

3150

3200

3250

3300

3350

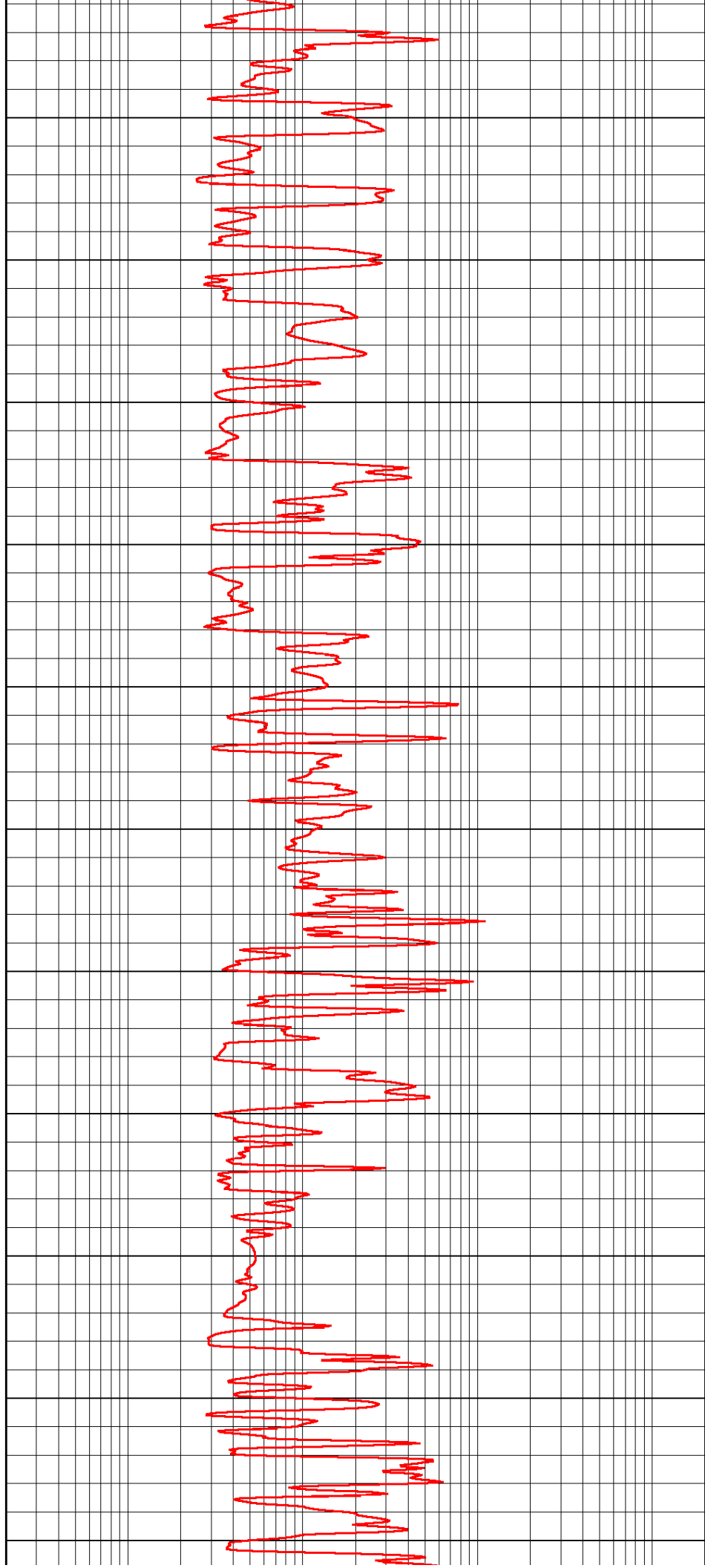
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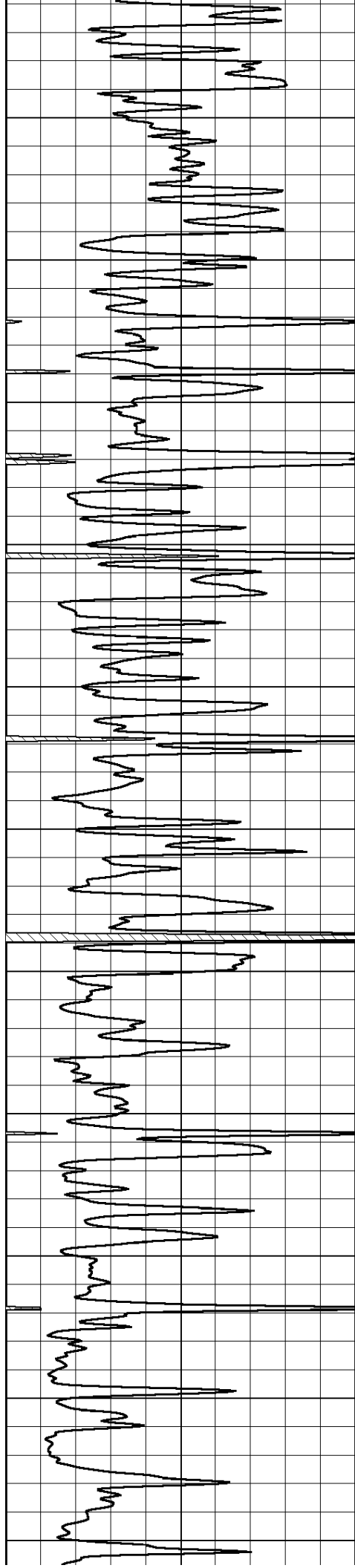
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3500

3550

3600





3650

3700

3750

3800

3850

3900

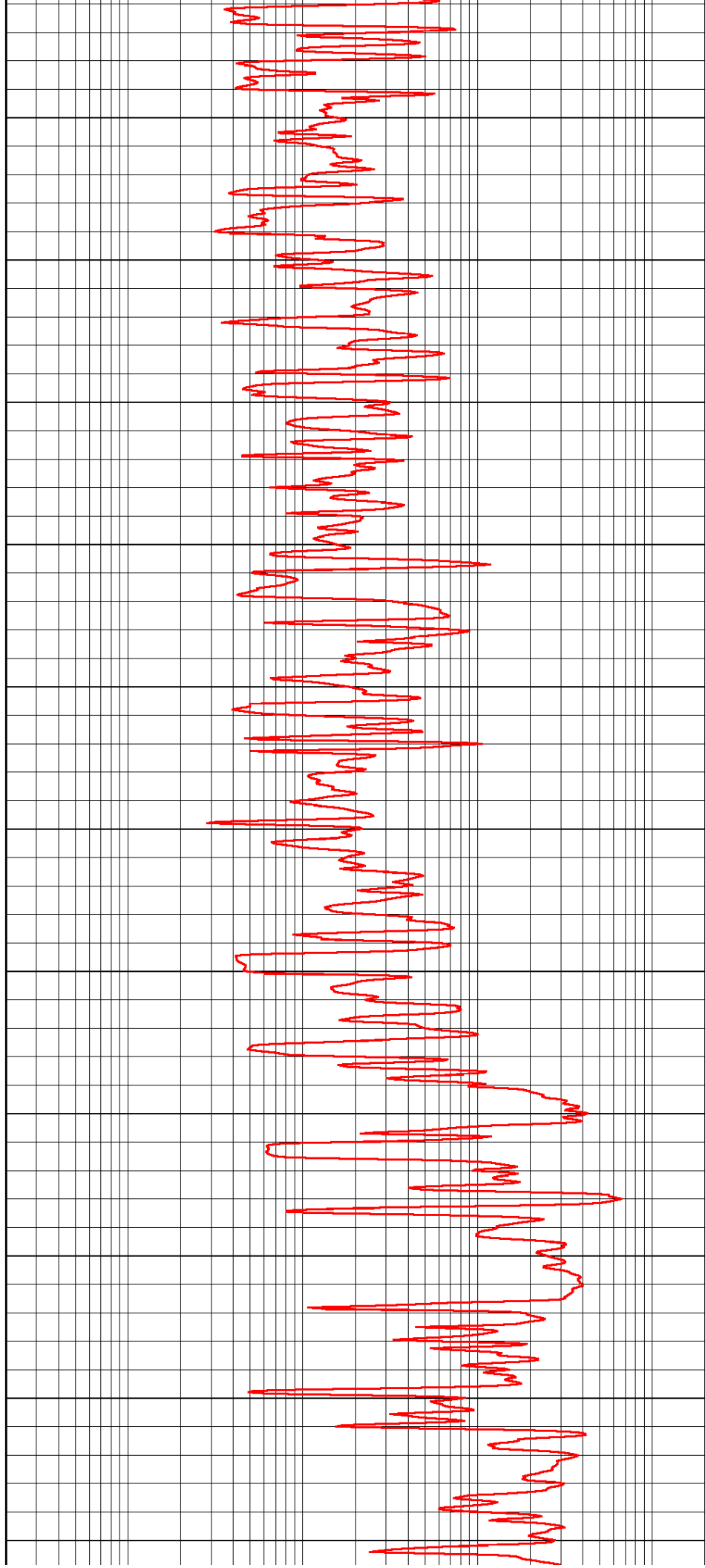
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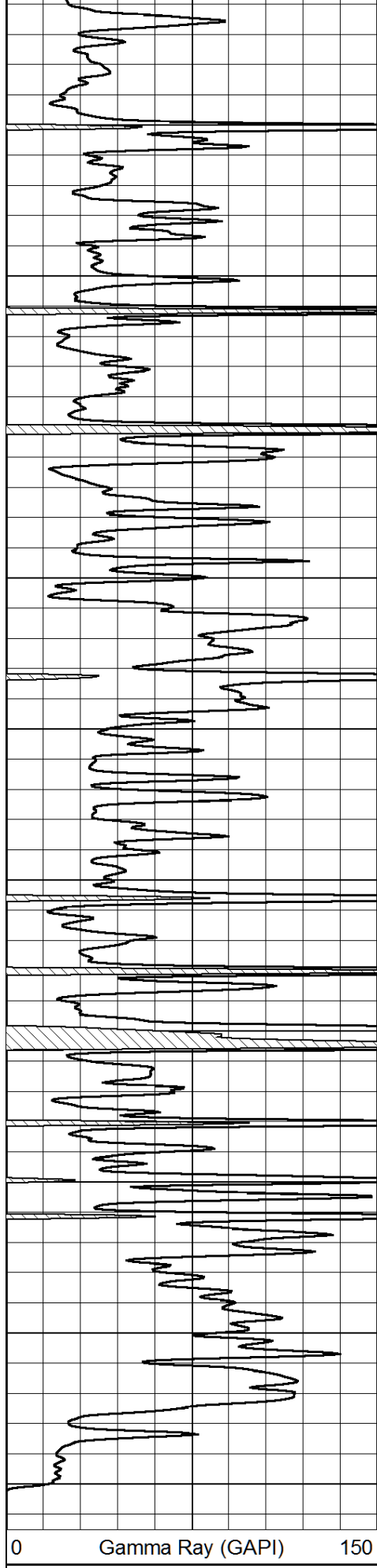
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4050

4100

4150





4200

4250

4300

4350

4400

4450

4500

4550

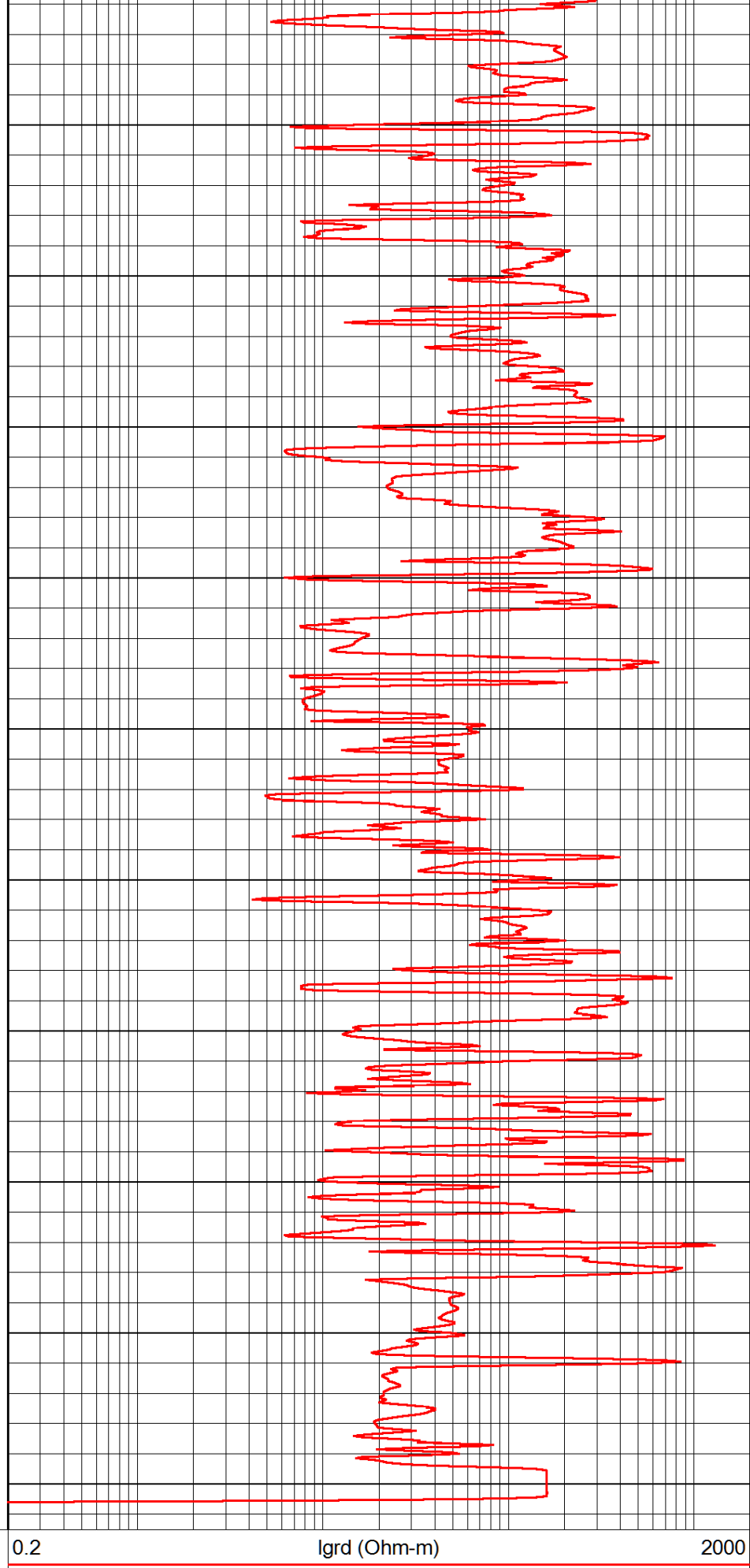
4600

4650

0

Gamma Ray (GAPI)

150



0.2

Igrd (Ohm-m)

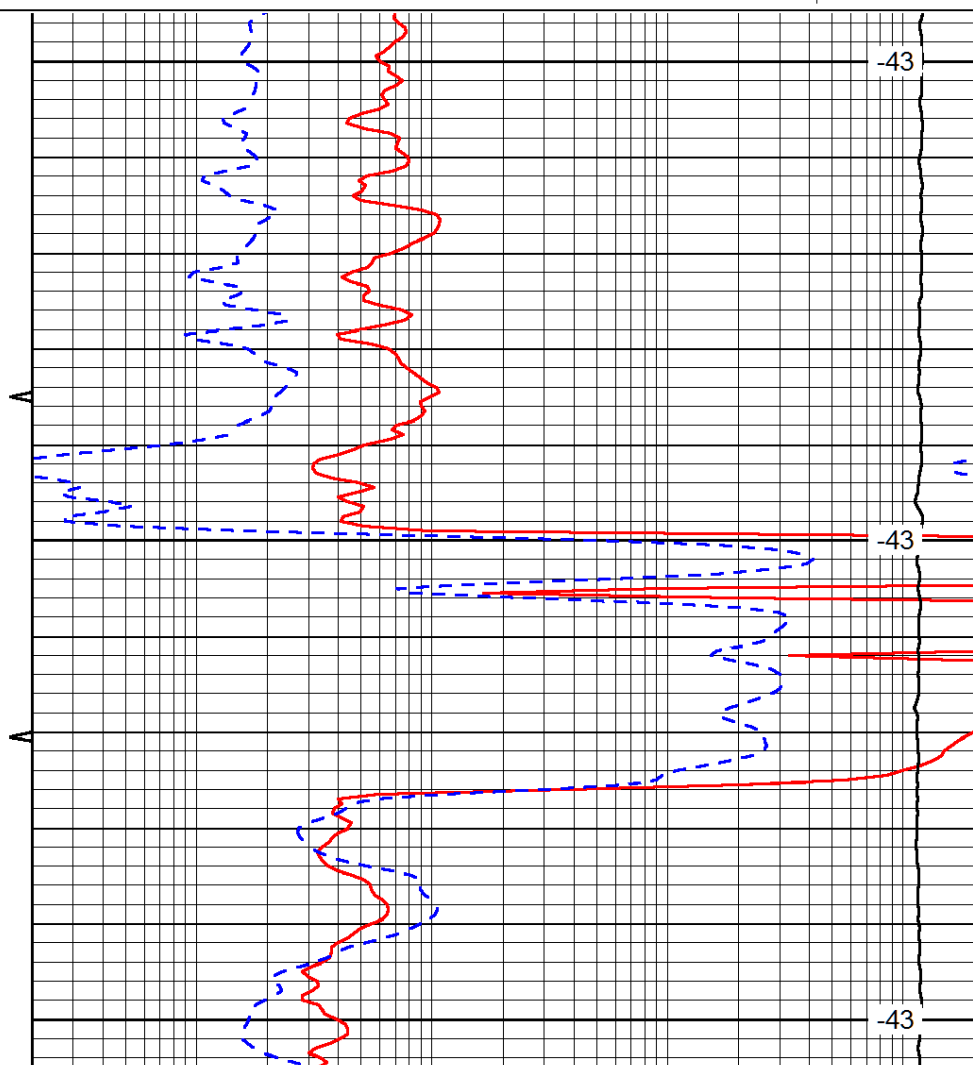
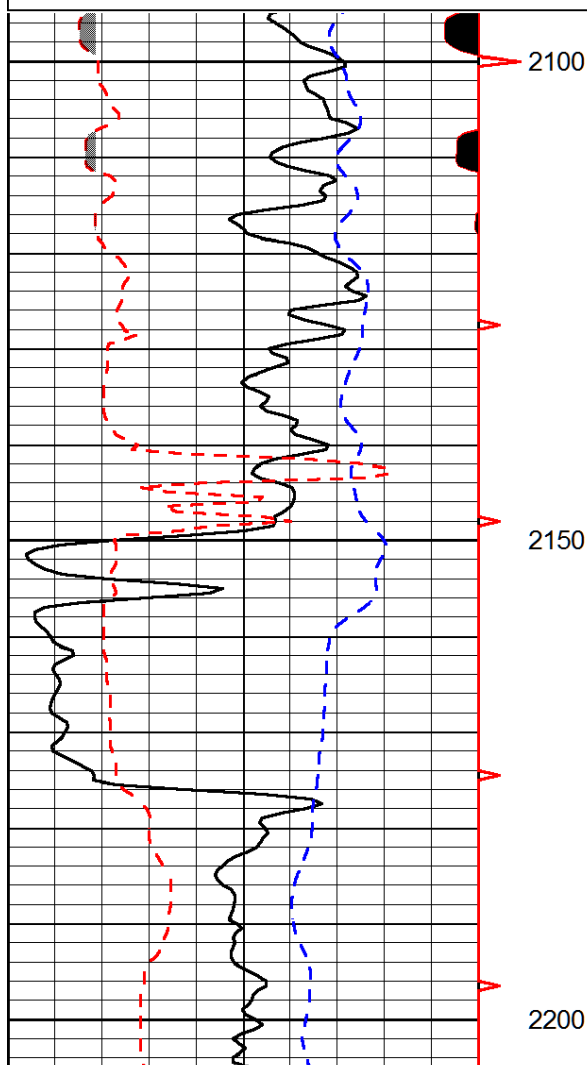
2000

Database File: northern_101113hd.db
Dataset Pathname: rag/@00000e60
Presentation Format: rag
Dataset Creation: Sat Oct 12 02:28:42 2013
Charted by: Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	SCAL (in)	16
-200	sp (mV)	0

0.2	LGRD (Ohm-m)	2000
560	SWNC (NAPI)	2160
15000	Line Tension (lb)	0

LSPD
(ft/min)



0	Gamma Ray (GAPI)	150
6	SCAL (in)	16
-200	sp (mV)	0

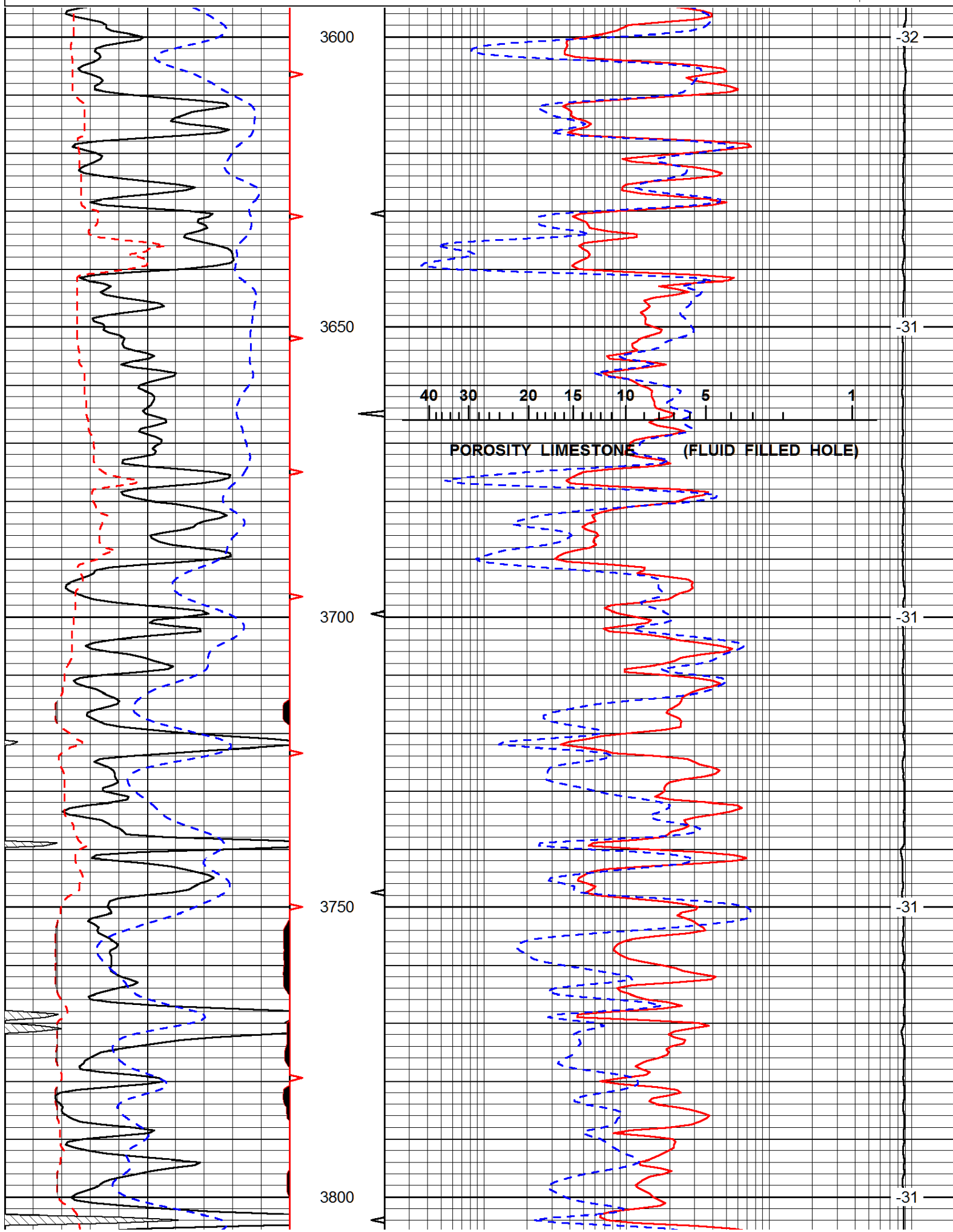
0.2	LGRD (Ohm-m)	2000
560	SWNC (NAPI)	2160
15000	Line Tension (lb)	0

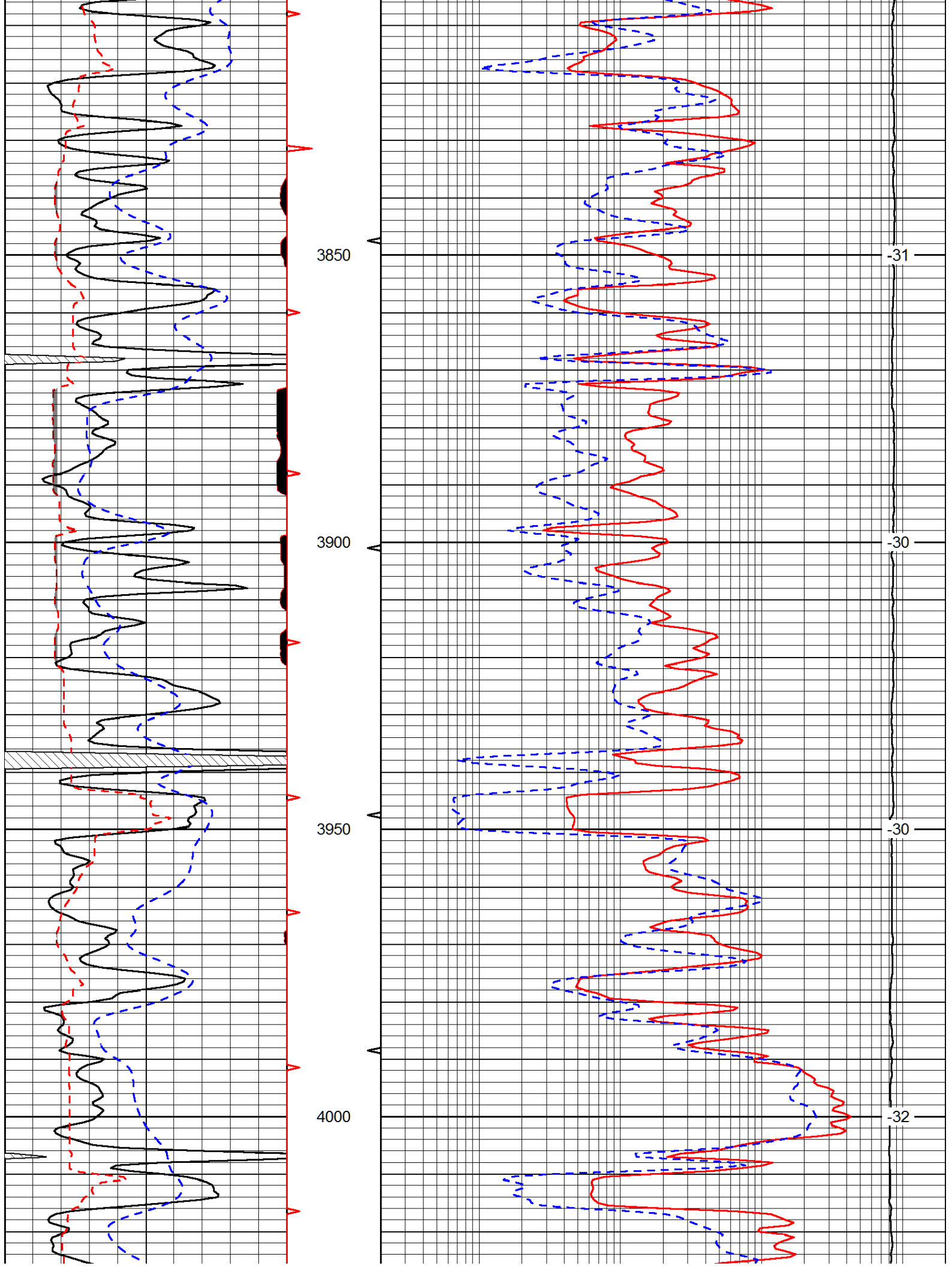
LSPD
(ft/min)

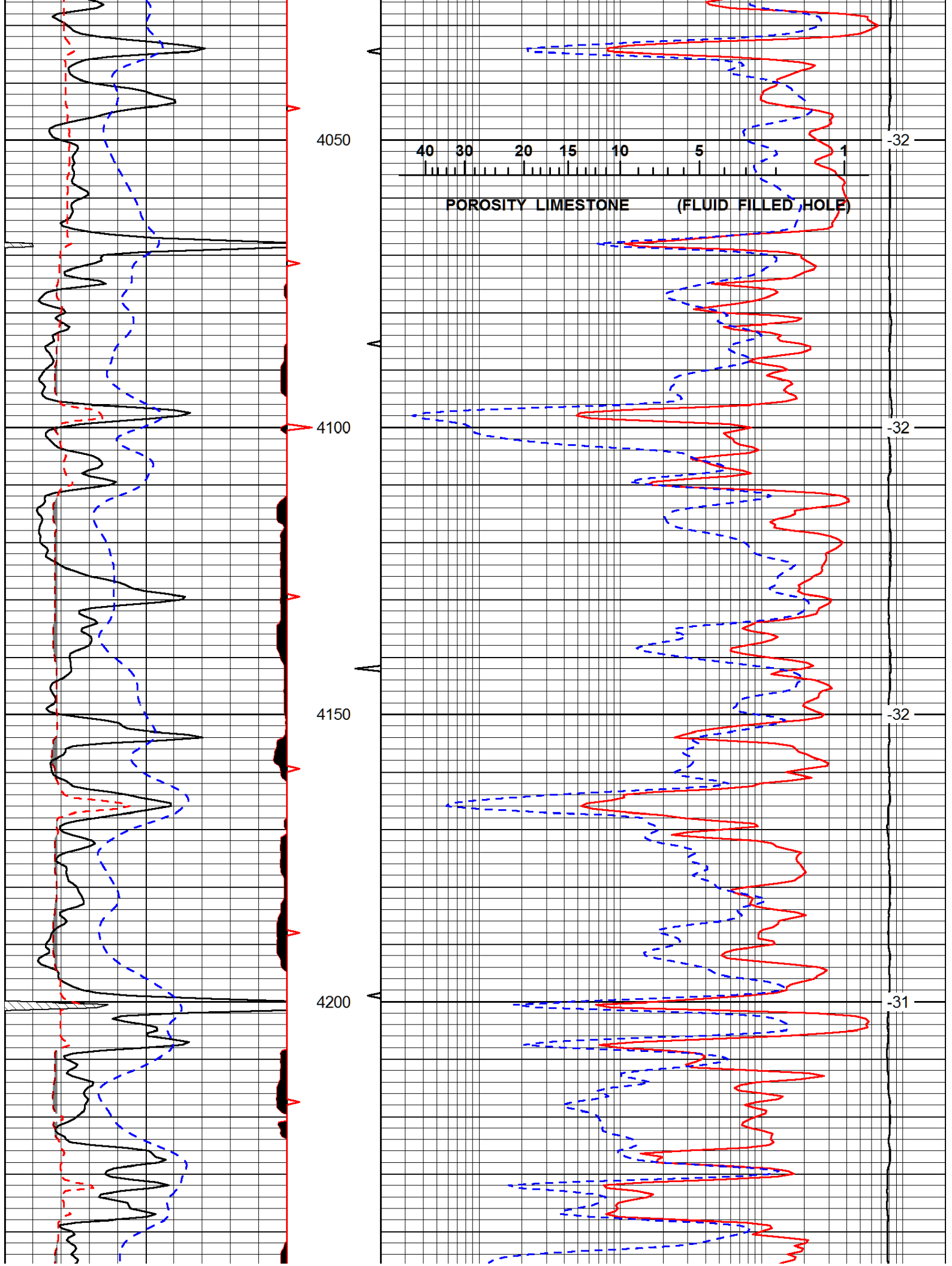
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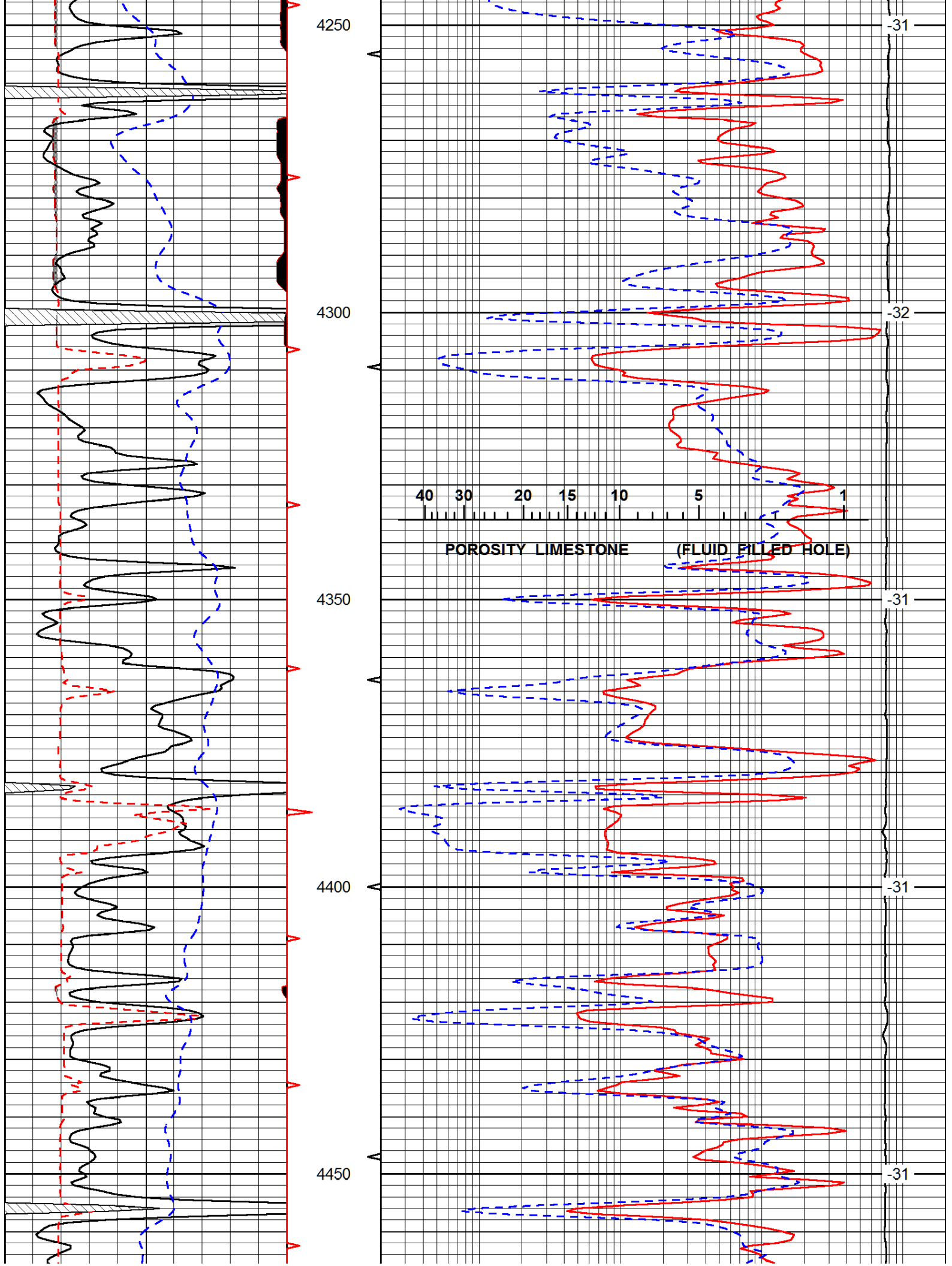
0	Gamma Ray (GAPI)	150
6	SCAL (in)	16
-200	sp (mV)	0

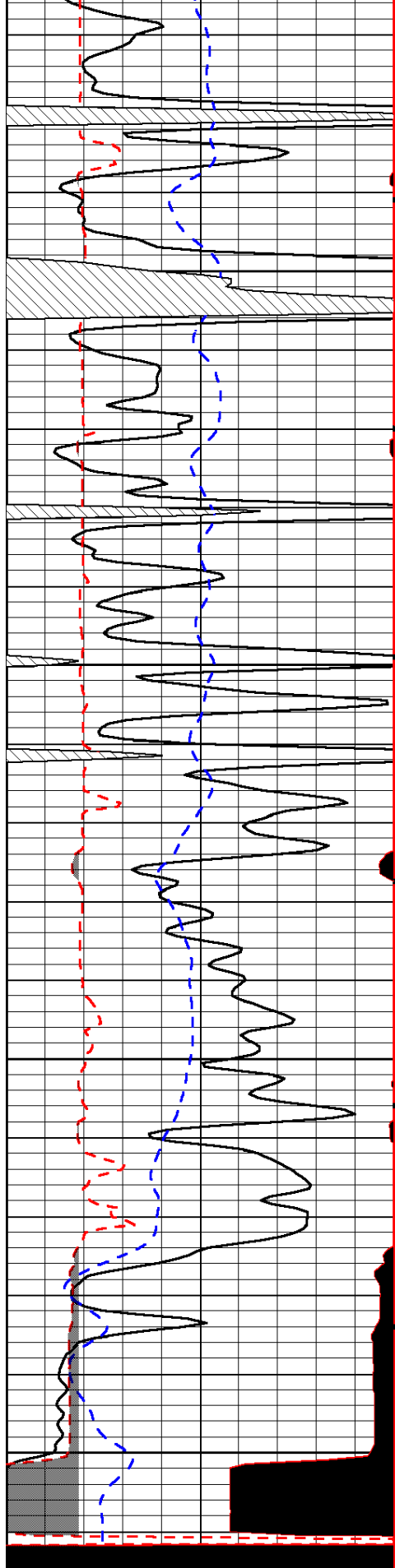
0.2	LGRD (Ohm-m)	2000
560	SWNC (NAPI)	2160
15000	Line Tension (lb)	0



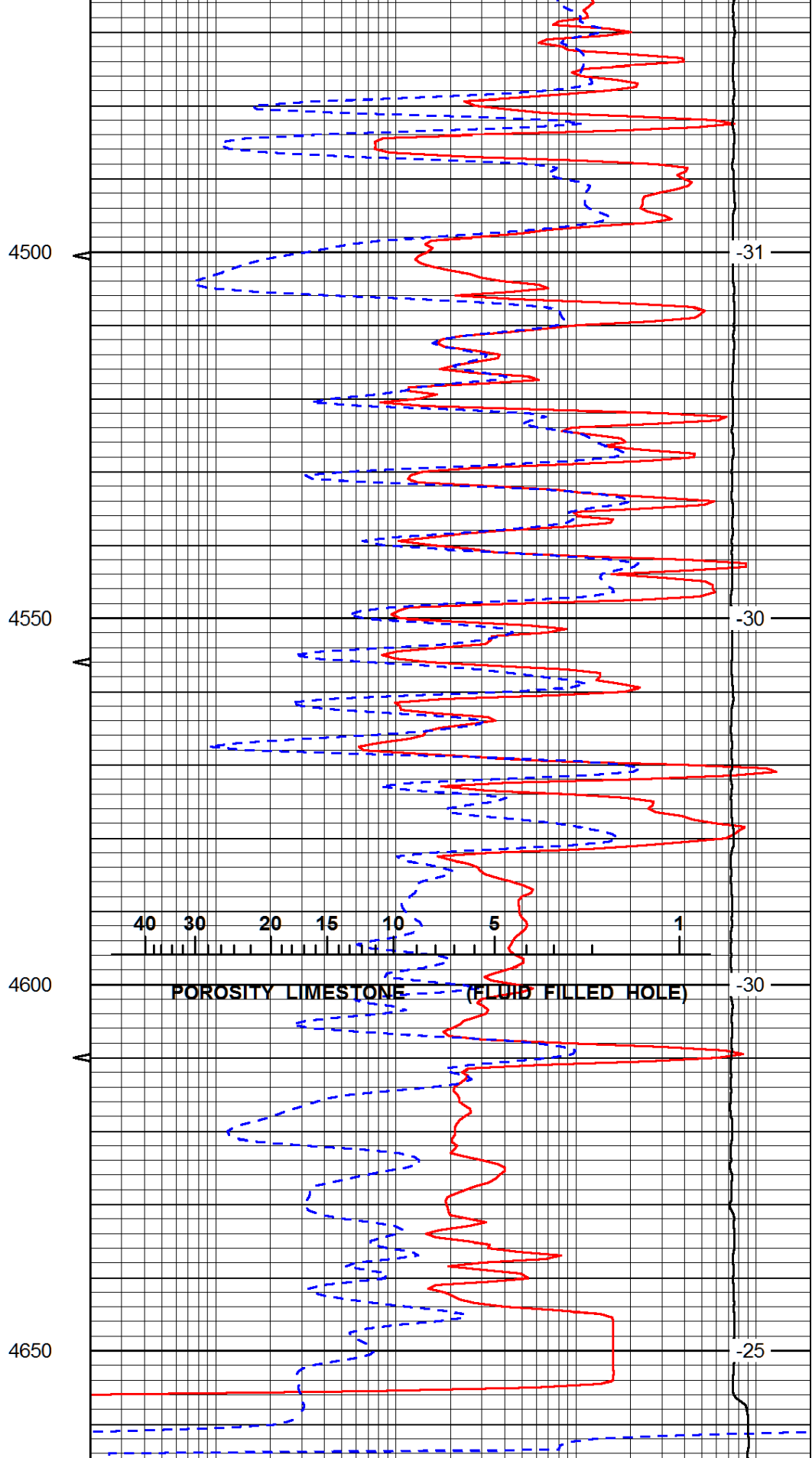








0	Gamma Ray (GAPI)	150
6	SCAL (in)	16
-200	sp (mV)	0



0.2	LGRD (Ohm-m)	2000
560	SWNC (NAPI)	2160
15000	Line Tension (lb)	0

