



Microresistivity Log

Pioneer Energy Services

API No.

15-053-21,295-00-00

Company American Warrior, Inc.

Well Grubb No. 1-5

Field Stollenberg

County Ellsworth State Kansas

Location NW-SE-SW-SE
335' FSL & 1652' FEL

Sec: 5 Twp: 16S Rge: 10W

Permanent Datum Ground Level Elevation 1820

Log Measured From Kelly Bushing 8 Ft. Above Perm. Datum

Drilling Measured From Kelly Bushing

Other Services
CNL/CDL
DIL/BHCS

Elevation
K.B. 1828
D.F. 1820
G.L. 1820

Date 12/8/13

Run Number Two

Depth Driller 3400

Depth Logger 3402

Bottom Logged Interval 3401

Top Log Interval 2700

Casing Driller 88.625 @ 376

Casing Logger 367

Bit Size 7.875

Type Fluid in Hole Chemical

Salinity, ppm CL 8,000

Density / Viscosity 9.0 50

pH / Fluid Loss 10.0 7.2

Source of Sample Flowline

Rm @ Meas. Temp 23 @ 56

Rmf @ Meas. Temp 17 @ 56

Rmc @ Meas. Temp 31 @ 56

Source of Rmf / Rmc Charts

Rm @ BHT .12 @ 110

Operating Rig Time 4 Hours

Max Rec. Temp. F 110

Equipment Number 108

Location Hays

Recorded By J. Henrickson

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.

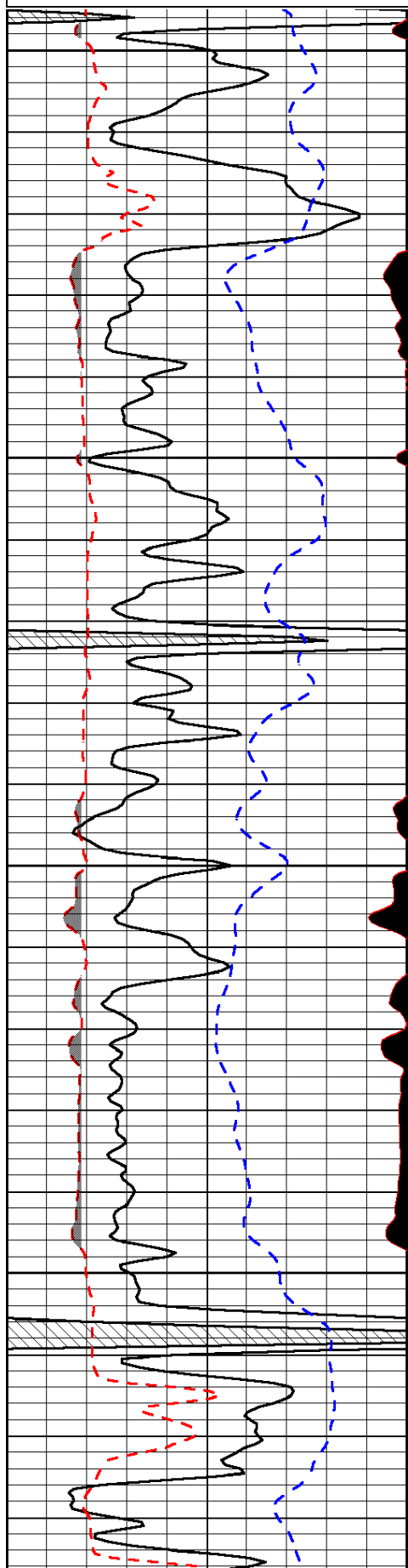
Comments

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

Wilson Kansas
10 South to Ave. N, 1 3/4 East, North Into

Database File: american_warrior_grubb_1_5hd.db
Dataset Pathname: DIL/awstk
Presentation Format: micro
Dataset Creation: Sun Dec 08 20:23:11 2013
Charted by: Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	MCAL (in)	16
2.875	Mud Cake (in)	7.875
-200	SP (mV)	0



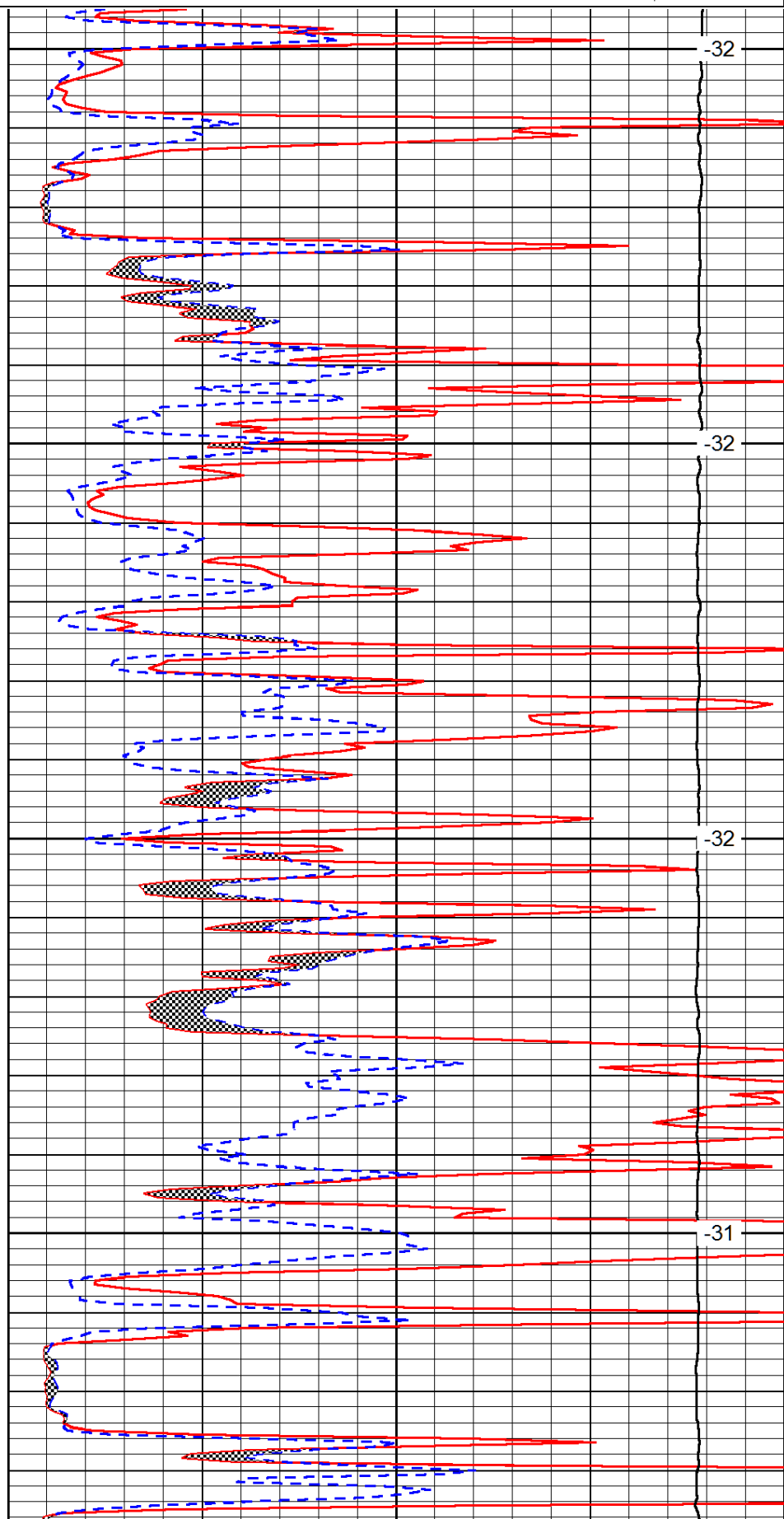
2700

2750

2800

2850

0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0
		LSPD (ft/min)

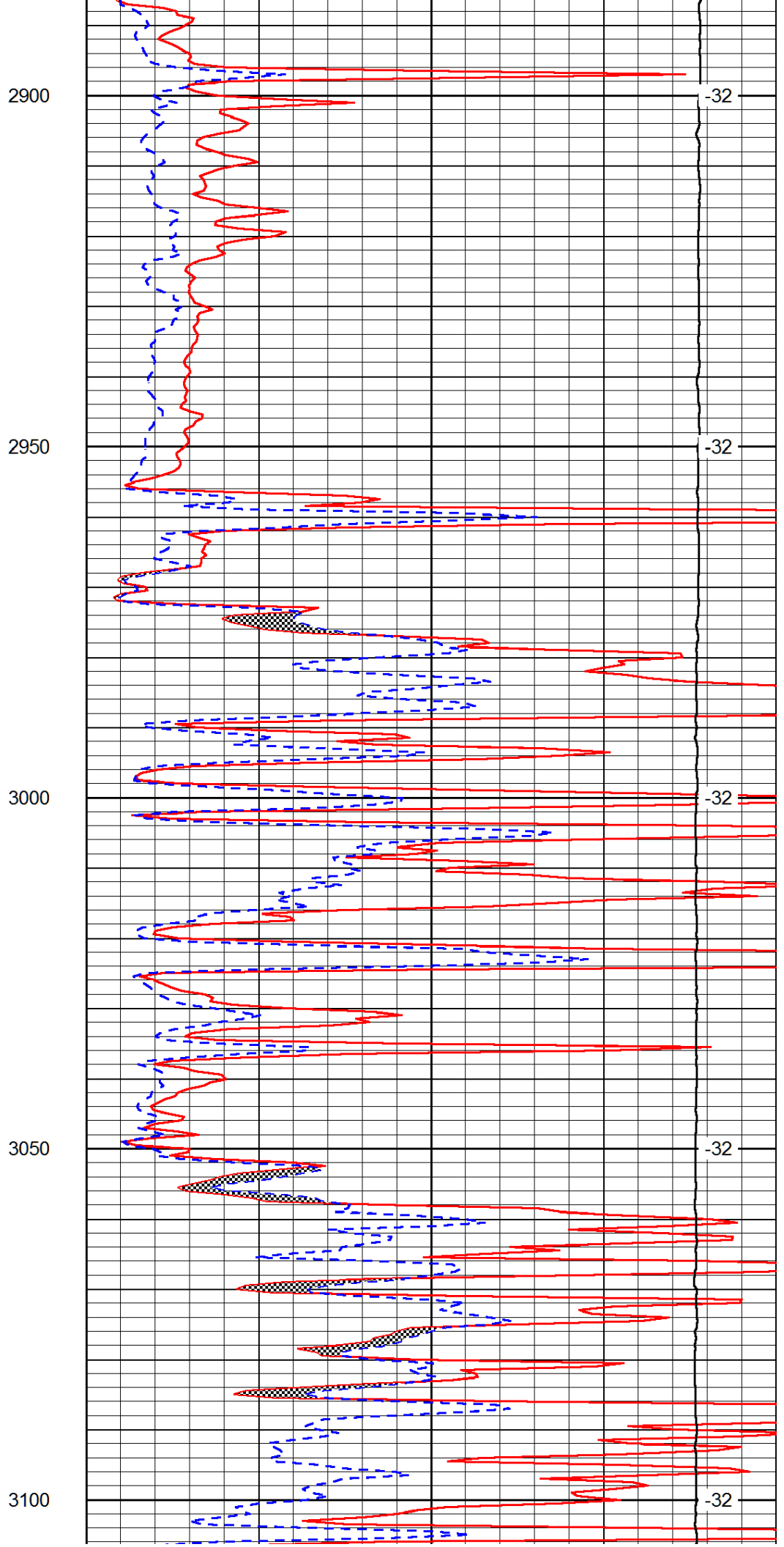
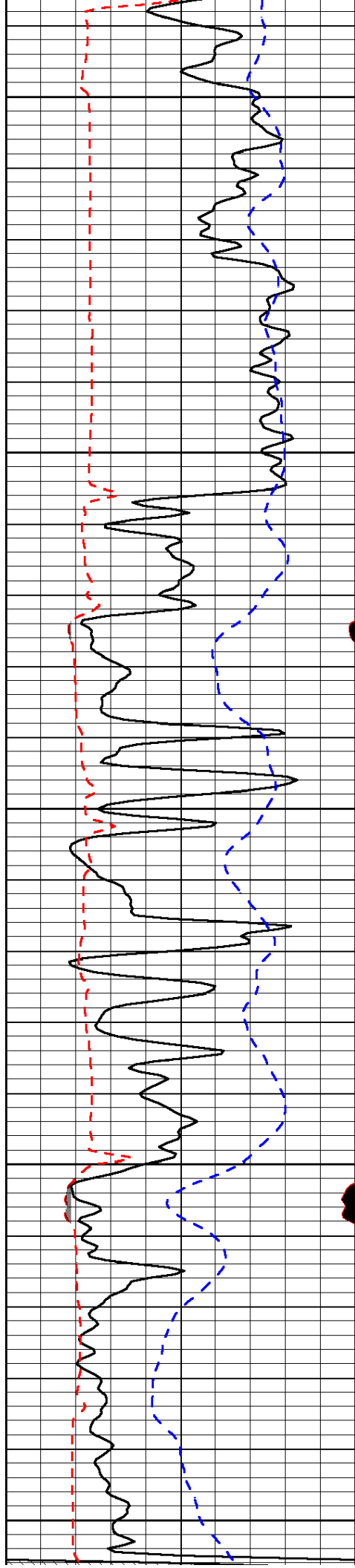


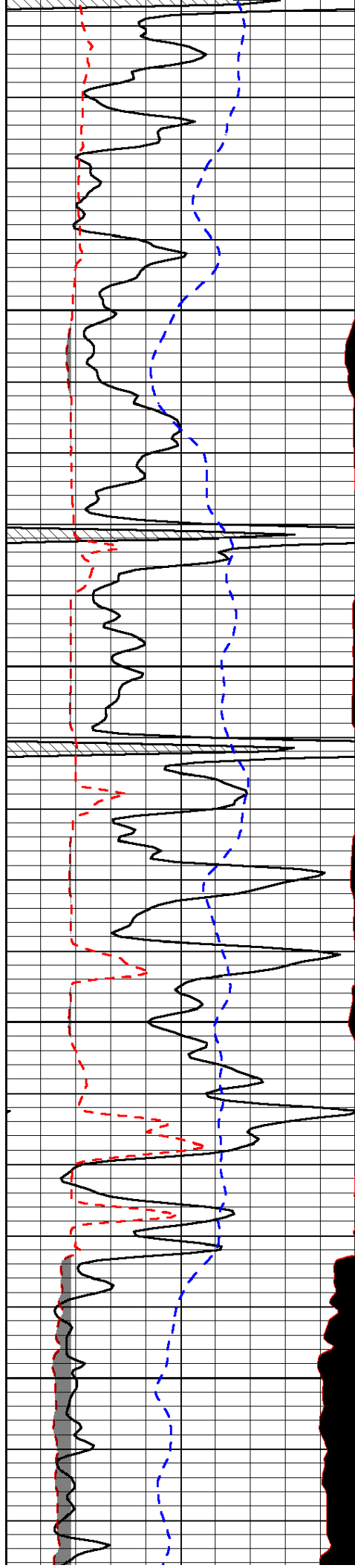
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-31



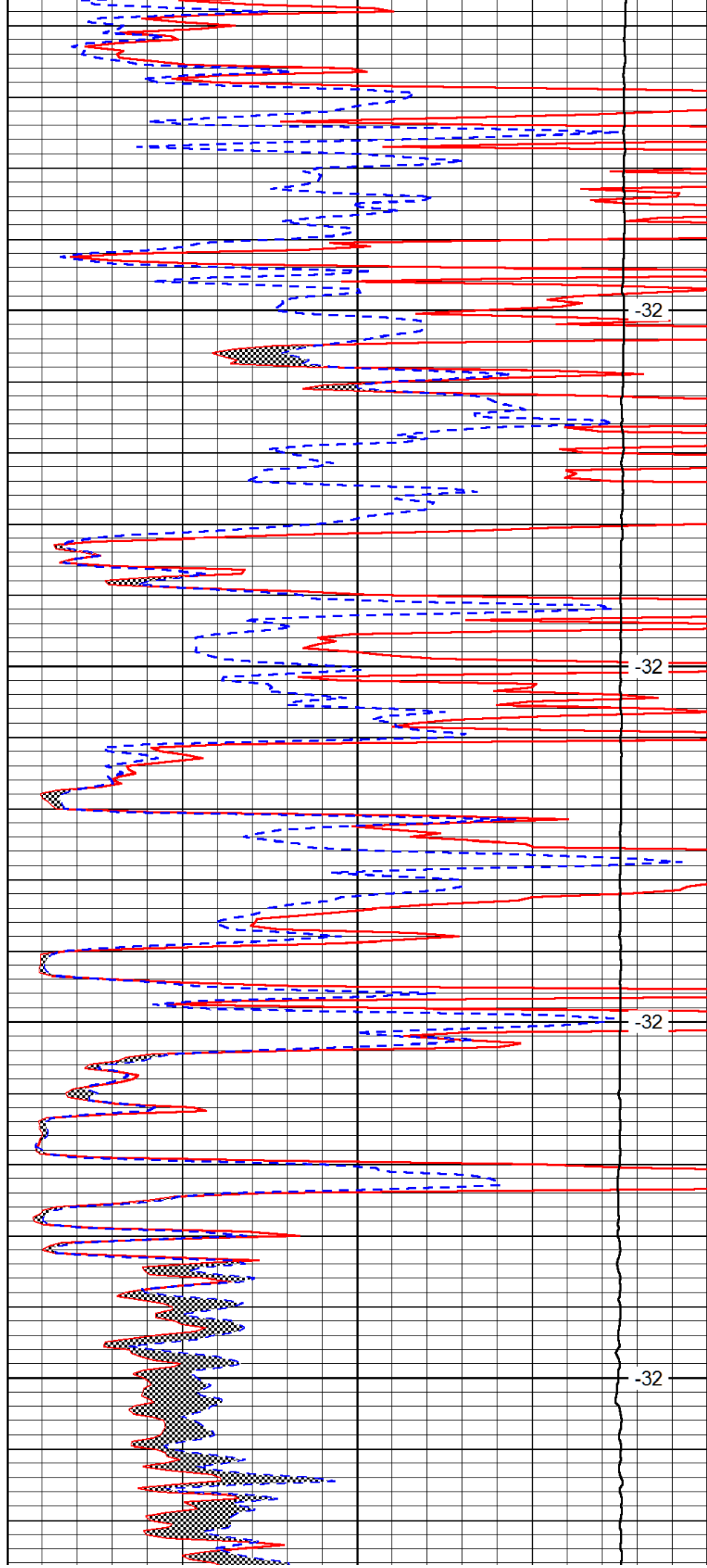


3150

3200

3250

3300

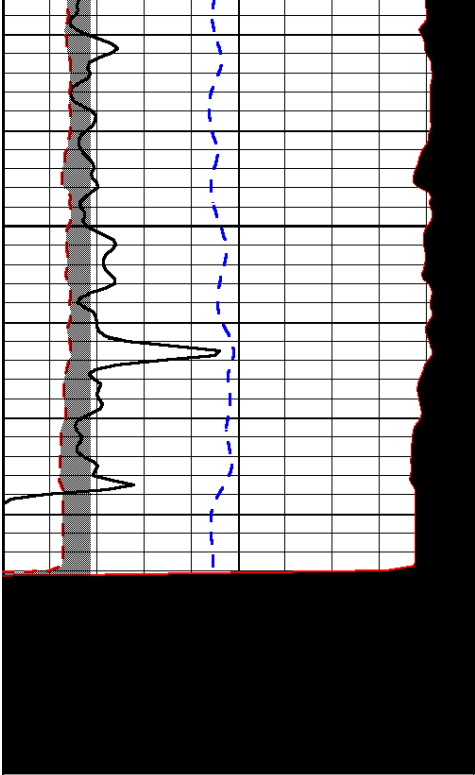


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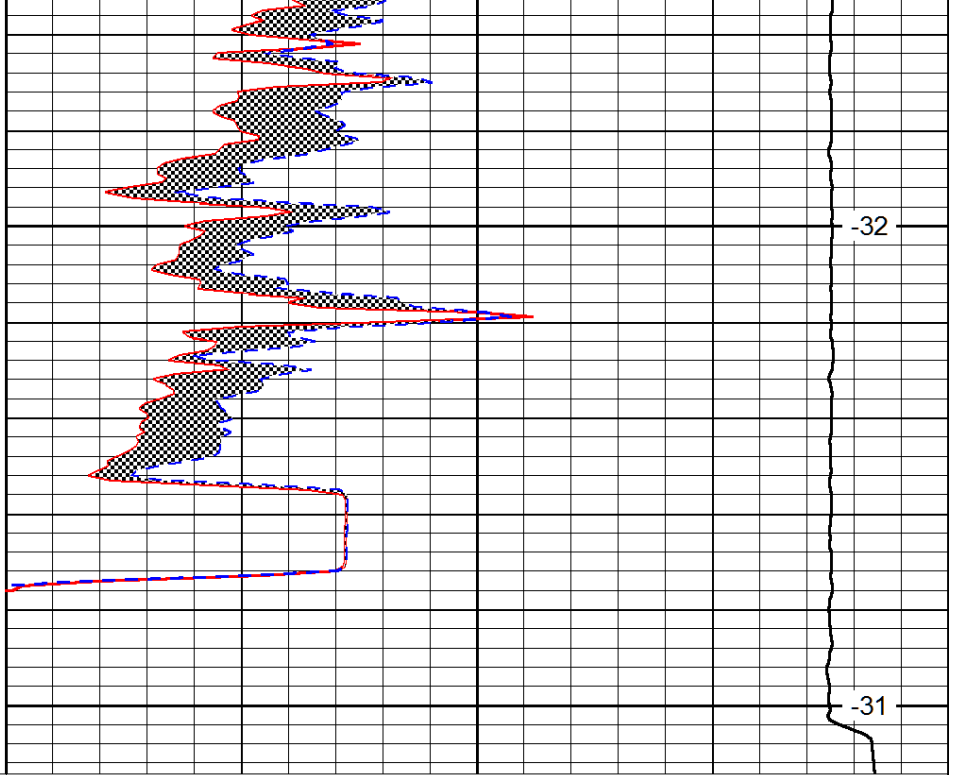
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