



Microresistivity Log

Pioneer Energy Services

API No.

15-065-23,899-00-00

Company H&C Oil Operating, Inc.

Well Minium # 23-1

Field Wildcat

County Graham State

Kansas

Location

1600' FSL & 2310' FEL

Sec: 23 Twp: 8 S Rge: 25 W

Other Services
CNL/CDL
DIL

Elevation

K.B. 2342
D.F. 2337
G.L. 2337

Permanent Datum Ground Level Elevation 2337
Log Measured From Kelly Bushing 5 Ft. Above Perm. Datum
Drilling Measured From Kelly Bushing

Date 4/2/2013

Run Number Two

Depth Driller 3923

Depth Logger 3924

Bottom Logged Interval 3923

Top Log Interval 3300

Casing Driller 8.625 @ 230

Casing Logger 228

Bit Size 7.875

Type Fluid in Hole Chemical

Salinity, ppm CL 1500

Density / Viscosity 9.4 56

pH / Fluid Loss 10.5 7.4

Source of Sample Flowline

Rm @ Meas. Temp 1.40 @ 63

Rmf @ Meas. Temp 1.05 @ 63

Rmc @ Meas. Temp 1.89 @ 63

Source of Rmf / Rmc Charts

Rm @ BHT .77 @ 115

Operating Rig Time 4 Hours

Max Rec. Temp. F 115

Equipment Number 15

Location Hays

Recorded By D. Kerr

Witnessed By Marc Downing

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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.

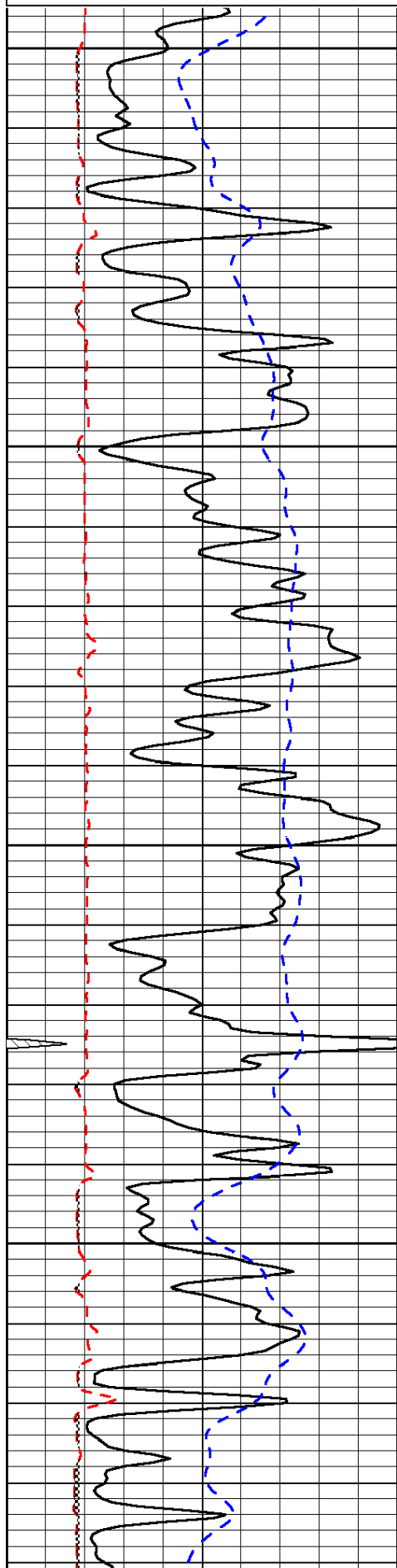
Comments

Thank you for using Pioneer Energy Services
www.pioneerres.com
785 625 3858

Morland KS, 1/2 South on 145 Ave,
South/East Into

Database File: c:\warrior\data\h&c_minium # 23-1\h&c_minium_23_1hd.db
Dataset Pathname: DIL\hcstk
Presentation Format: micro
Dataset Creation: Tue Apr 02 03:01:35 2013
Charted by: Depth in Feet scaled 1:240

Charted by: Depth in Feet scaled 1:2.15		
0	Gamma Ray	150
6	Micro Log Caliper (GAPI)	16
-200	SP (mV)	0

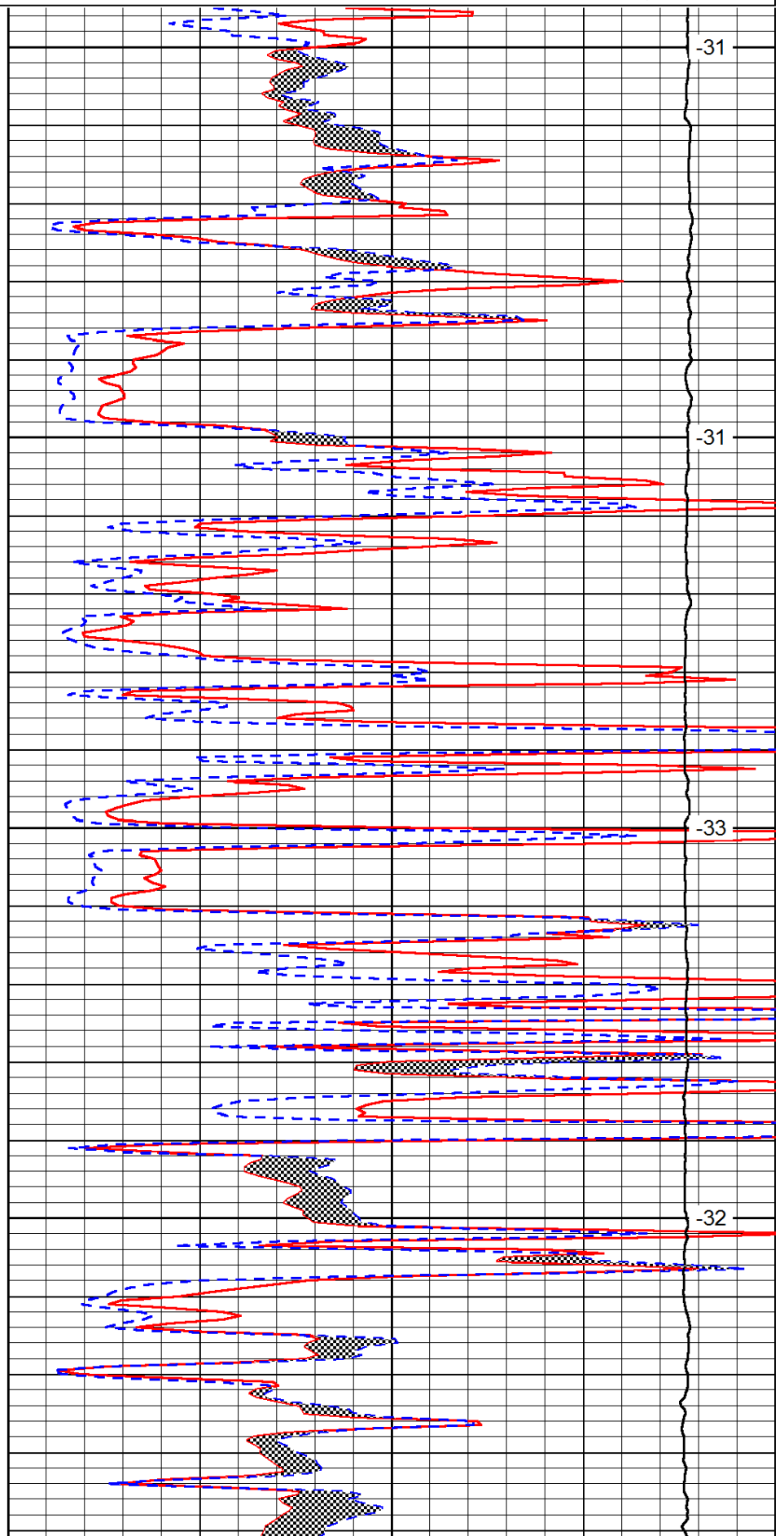


3300

3350

3400

3450



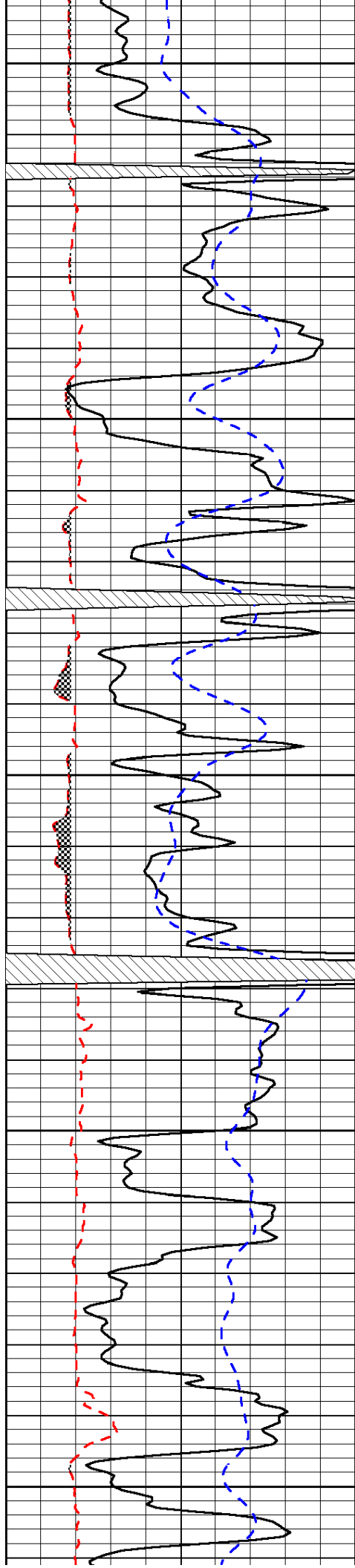
-31

-31

-33

-32

LSPD



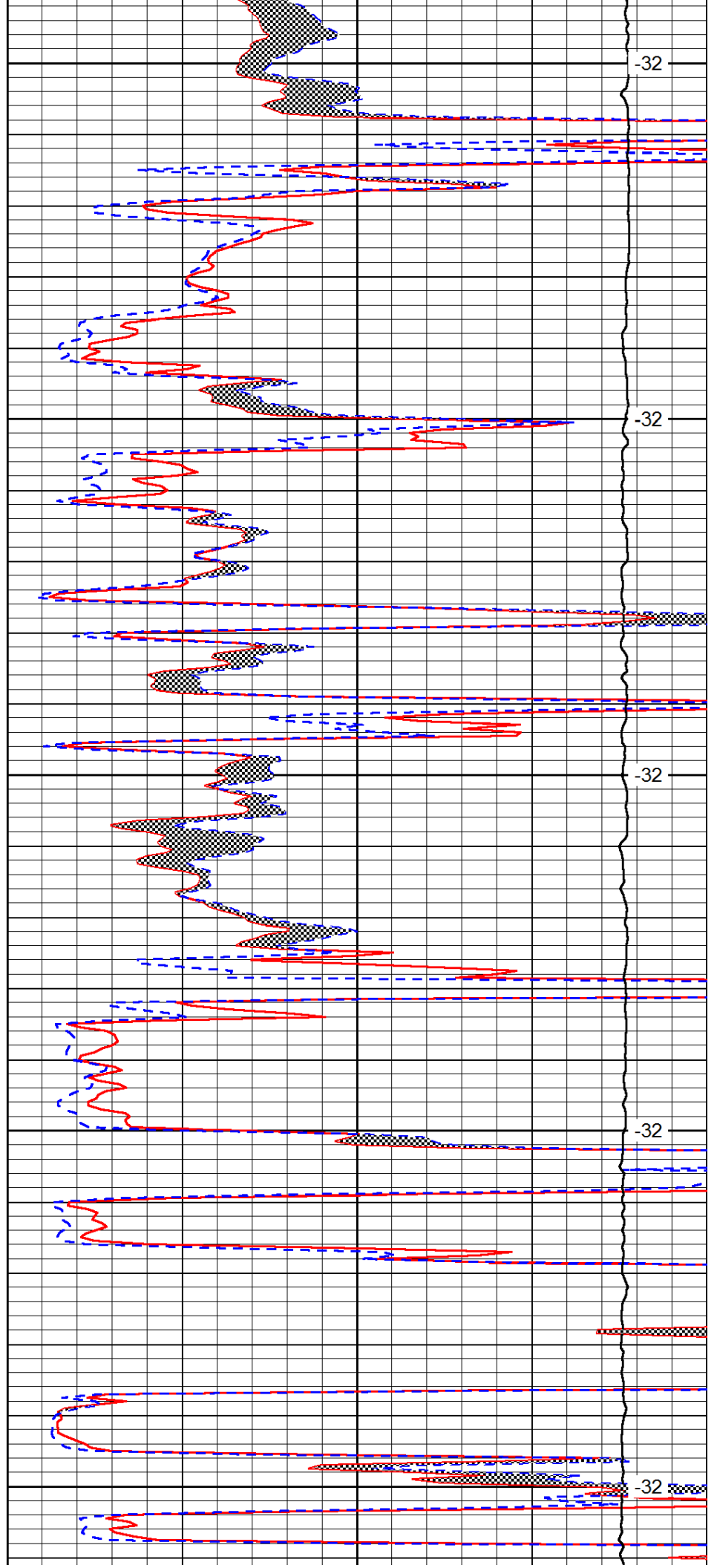
3500

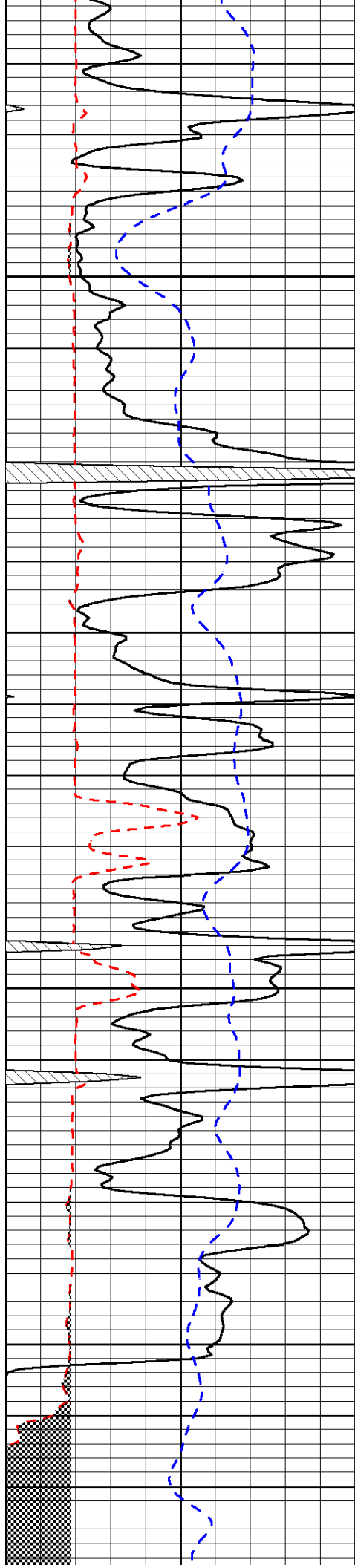
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3600

3650

3700



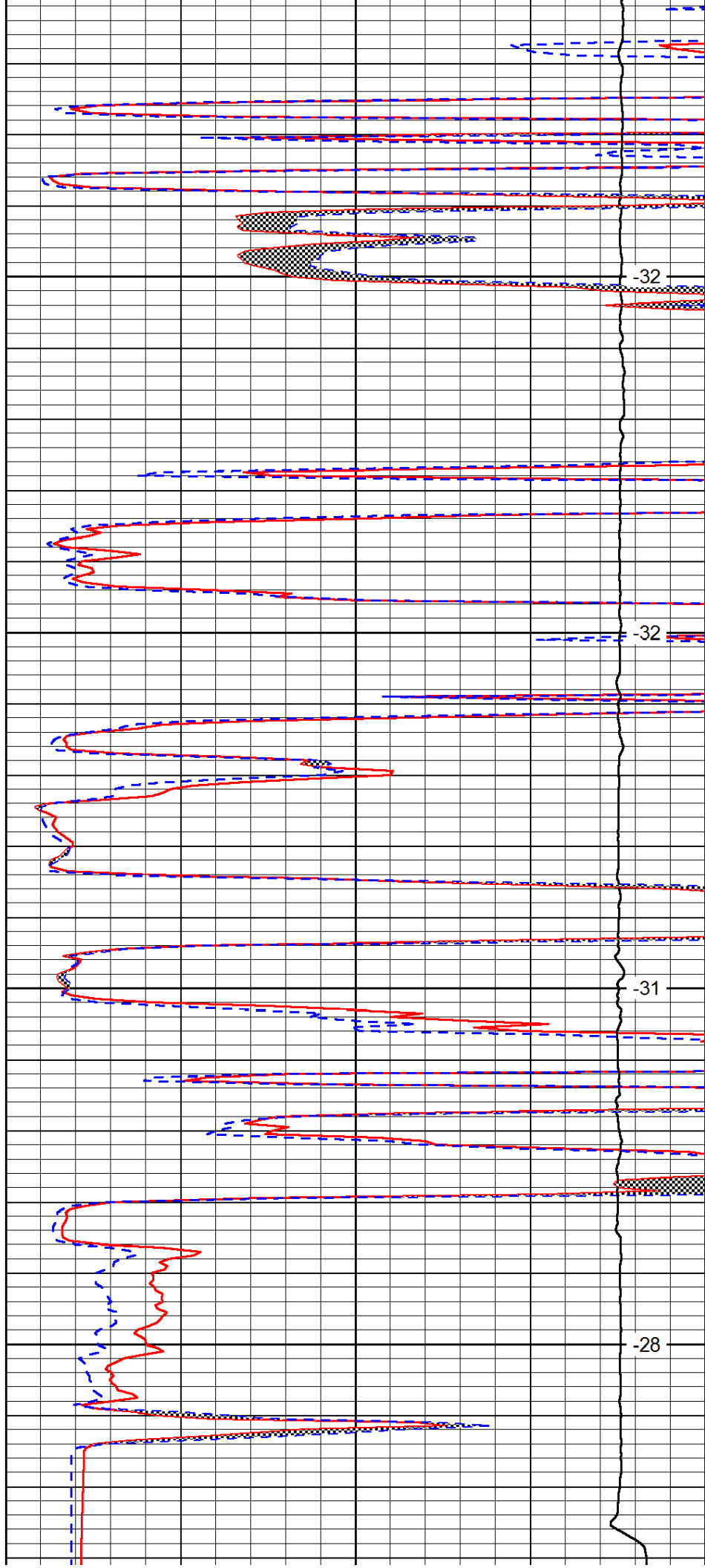


3750

3800

3850

3900



-32

-32

-31

-28

0	Gamma Ray	150
6	Micro Log Caliper (GAPI)	16
-200	SP (mV)	0

0	Micro Inverse 1 X 1	40
0	Micro Normal 2"	40
15000	Line Weight	0

LSPD