



## Dual Compensated Porosity Log

Pioneer Energy Services

API No.

15-017-20919-00-00

Company Range Oil Comapny, Inc.

Well Madden Unit #3

Field Pather Ranch SW

County Chase State Kansas

Location NW SW SE NW  
2140' FNL / 1530' FWL

Sec: 31

Twp: 19S

Rge: 6E

Other Services  
DIL/MEL

Permanent Datum Ground Level Elevation 1460

Log Measured From Kelly Bushing 6 Ft. Above Perm. Datum

K.B. 1466  
D.F.  
G.L. 1460

Date 11/23/14

Run Number Two

Type Log CNL / CDL

Depth Driller 2300

Depth Logger 2298

Bottom Logged Interval 2296

Top Logged Interval 1300

Type Fluid In Hole Chemical

Salinity, PPM CL 1300

Density 9.3

Level Full

Max. Rec. Temp. F 99

Operating Rig Time 4 Hours

Equipment -- Location 15 Hays

Recorded By R. Barnhart

Witnessed By Ken Wallace

Borehole Record

Casing Record

| Run No | Bit   | From | To  | Size  | Wgt. | From | To  |
|--------|-------|------|-----|-------|------|------|-----|
| One    | 12.25 | 00   | 218 | 8.625 | 23#  | 00   | 218 |
| Two    | 7.875 | 218  | TD  |       |      |      |     |
|        |       |      |     |       |      |      |     |
|        |       |      |     |       |      |      |     |
|        |       |      |     |       |      |      |     |
|        |       |      |     |       |      |      |     |
|        |       |      |     |       |      |      |     |
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|        |       |      |     |       |      |      |     |

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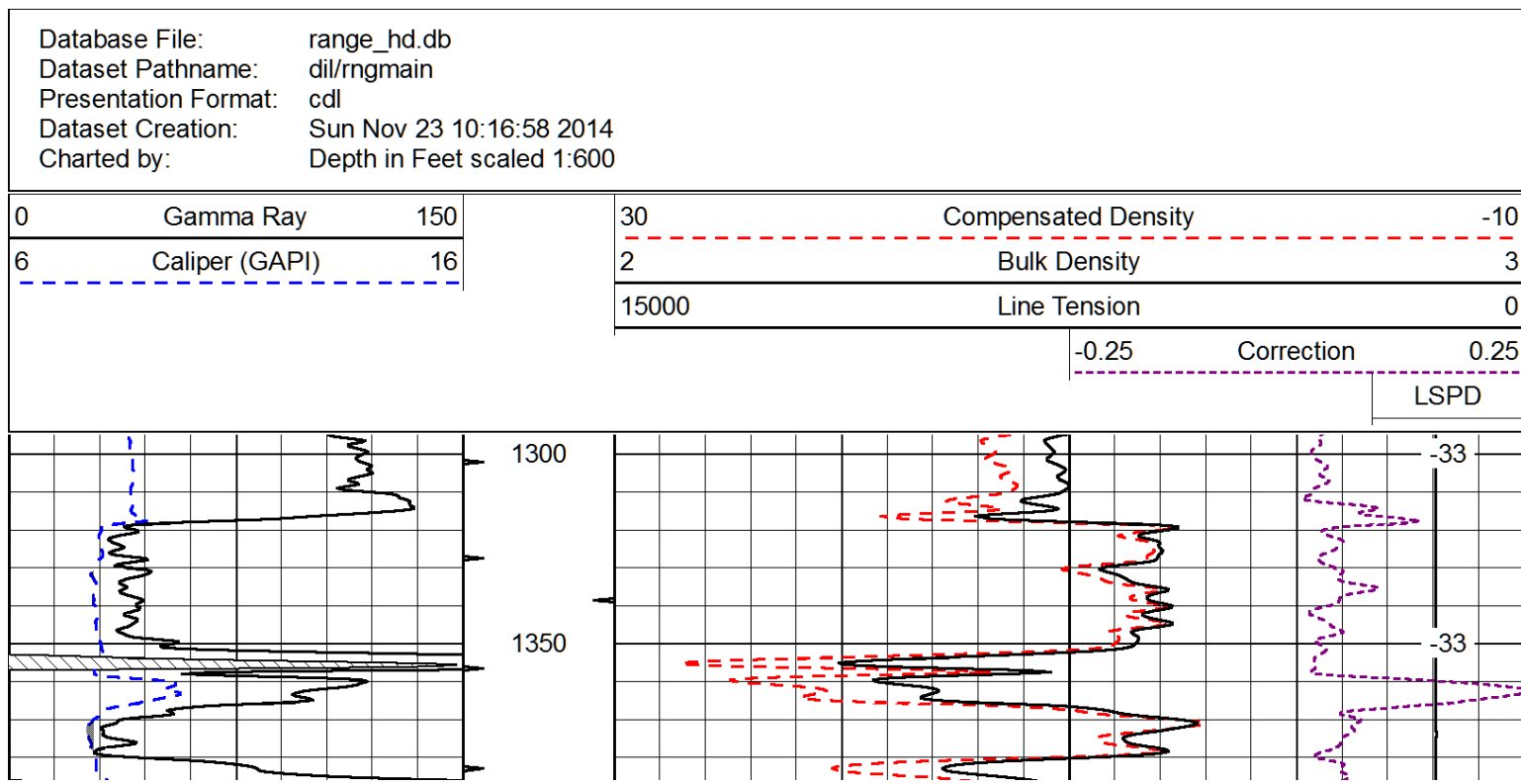
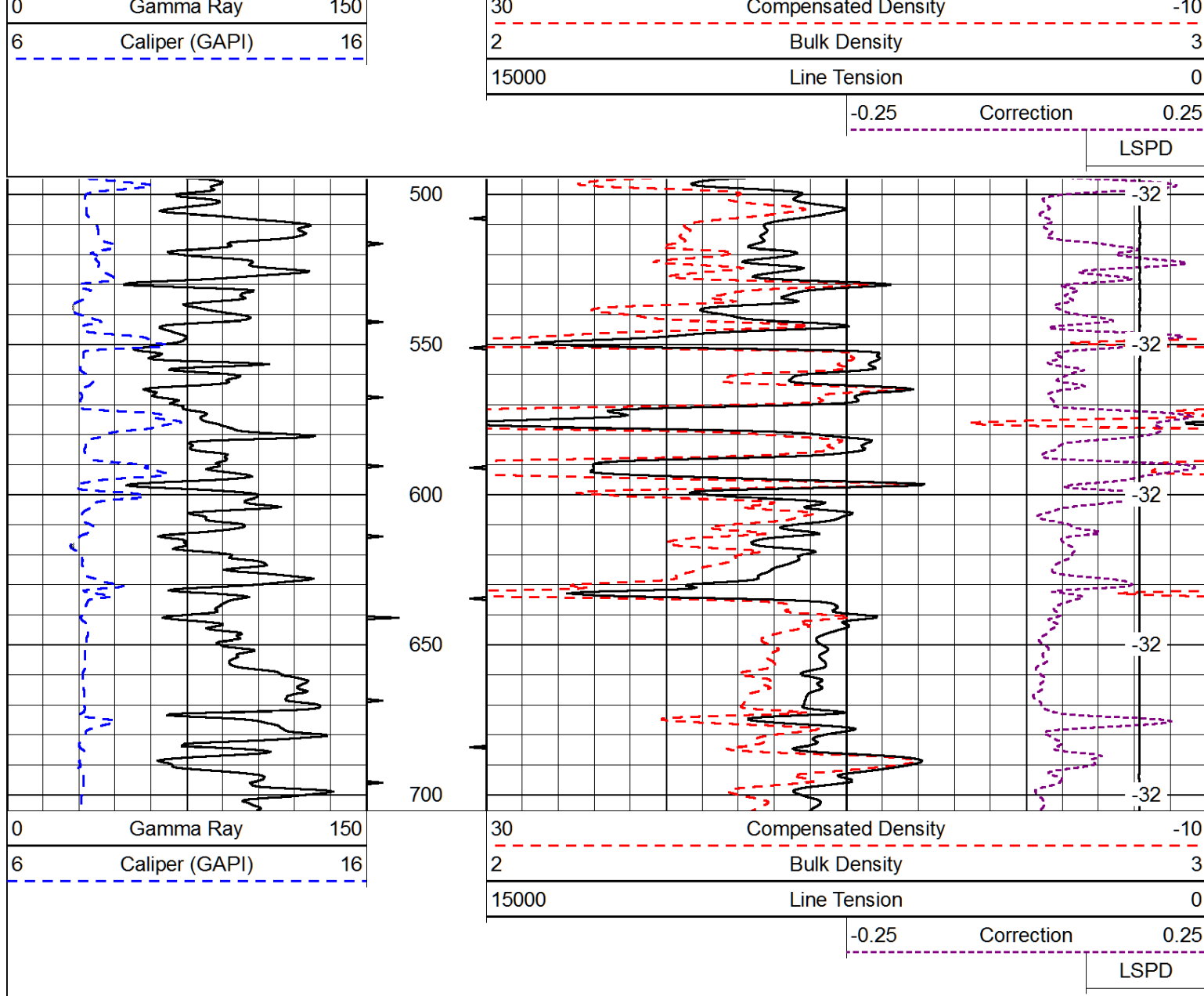
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

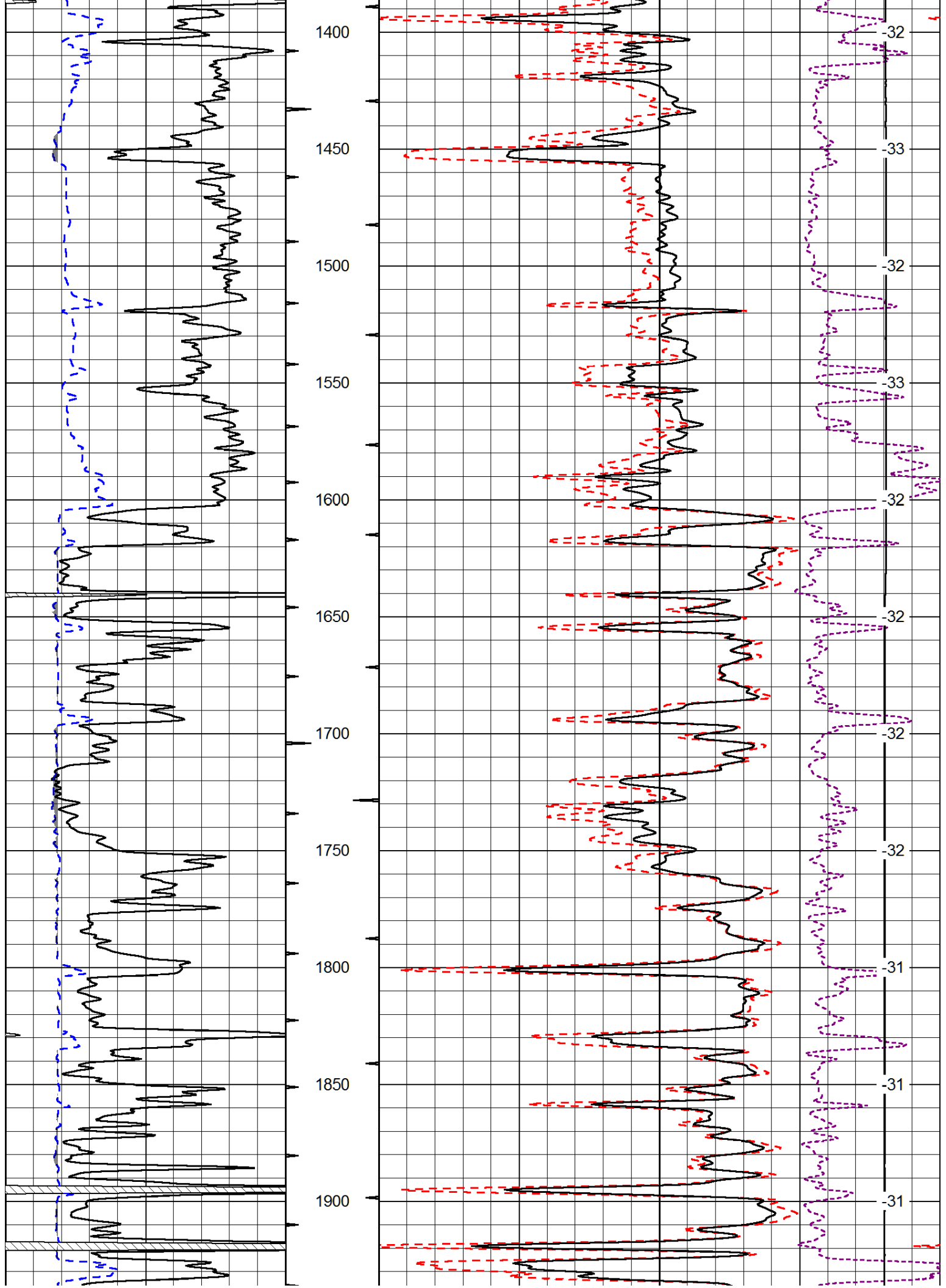
### Comments

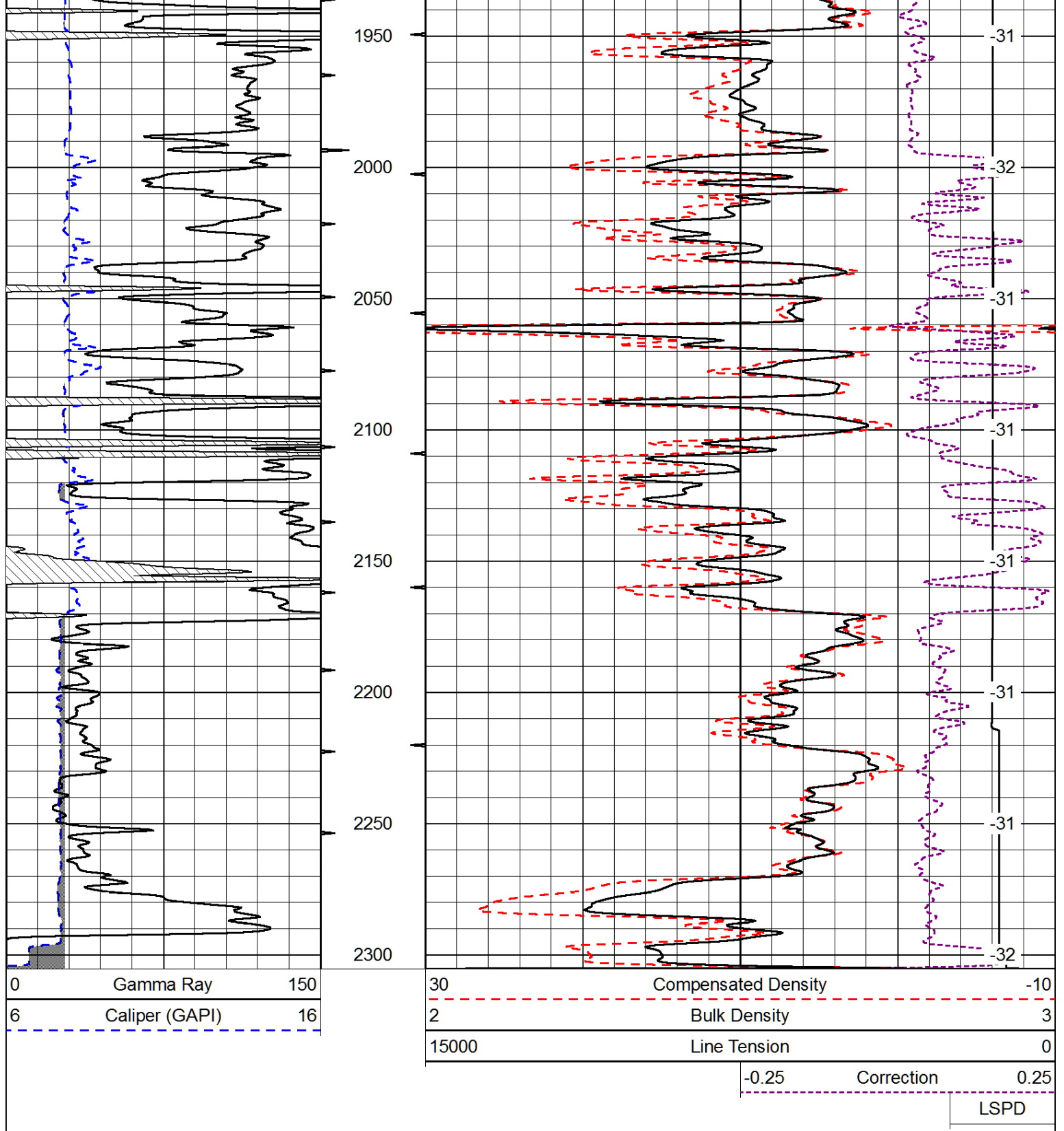
Thank you for using Log-Tech, Inc.  
(785) 625-3858

Marion, KS:  
Hwy 77 & 150: 8.2E, S into

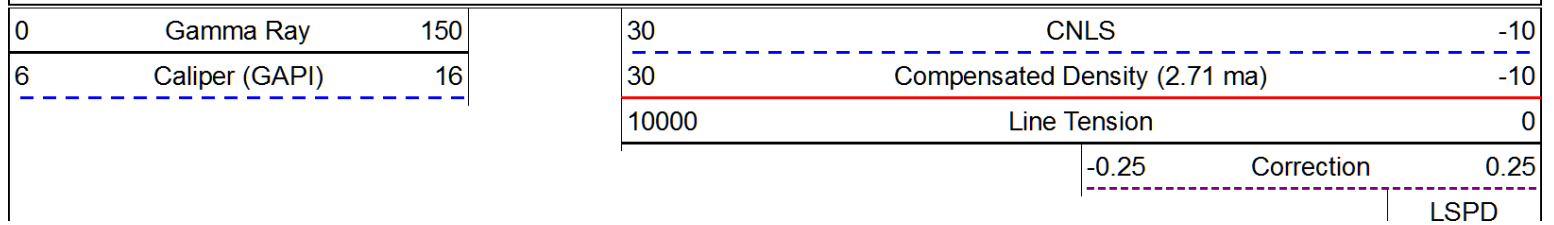
Database File: range\_hd.db  
Dataset Pathname: dil/rngmain  
Presentation Format: cdl  
Dataset Creation: Sun Nov 23 10:16:58 2014  
Charted by: Depth in Feet scaled 1:600

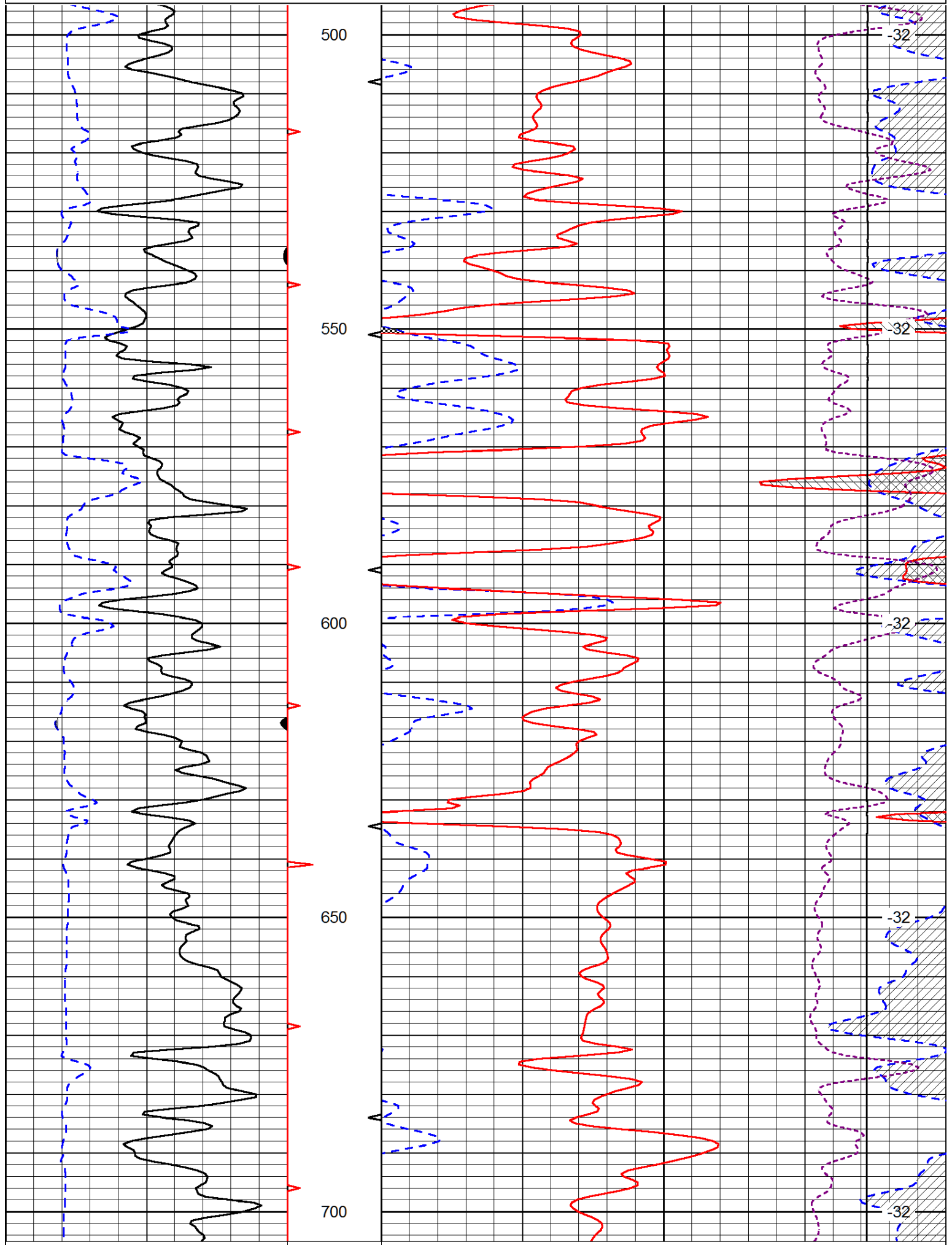






Database File: range\_hd.db  
Dataset Pathname: dil/rngmain  
Presentation Format: cndlspec  
Dataset Creation: Sun Nov 23 10:16:58 2014  
Charted by: Depth in Feet scaled 1:240





| Panel              | Y-axis Label                 | Y-axis Range | Line Style/Color   | Value at 550 |
|--------------------|------------------------------|--------------|--------------------|--------------|
| Gamma Ray          | Gamma Ray                    | 0 to 150     | Black solid line   | -32          |
| CNLS               | CNLS                         | 30 to 40     | Red solid line     | -32          |
| Compressed Density | Compressed Density (0.74 mg) | -10 to 40    | Purple dashed line | -32          |

|                |    |       |                               |            |      |
|----------------|----|-------|-------------------------------|------------|------|
| Caliper (GAPI) | 16 | 30    | Compensated Density (2.71 ma) | -10        |      |
|                |    | 10000 | Line Tension                  | 0          |      |
|                |    |       | -0.25                         | Correction | 0.25 |
|                |    | LSPD  |                               |            |      |

Database File:

range\_hd.db

Dataset Pathname:

dil/rngmain

Presentation Format:

cndlspec

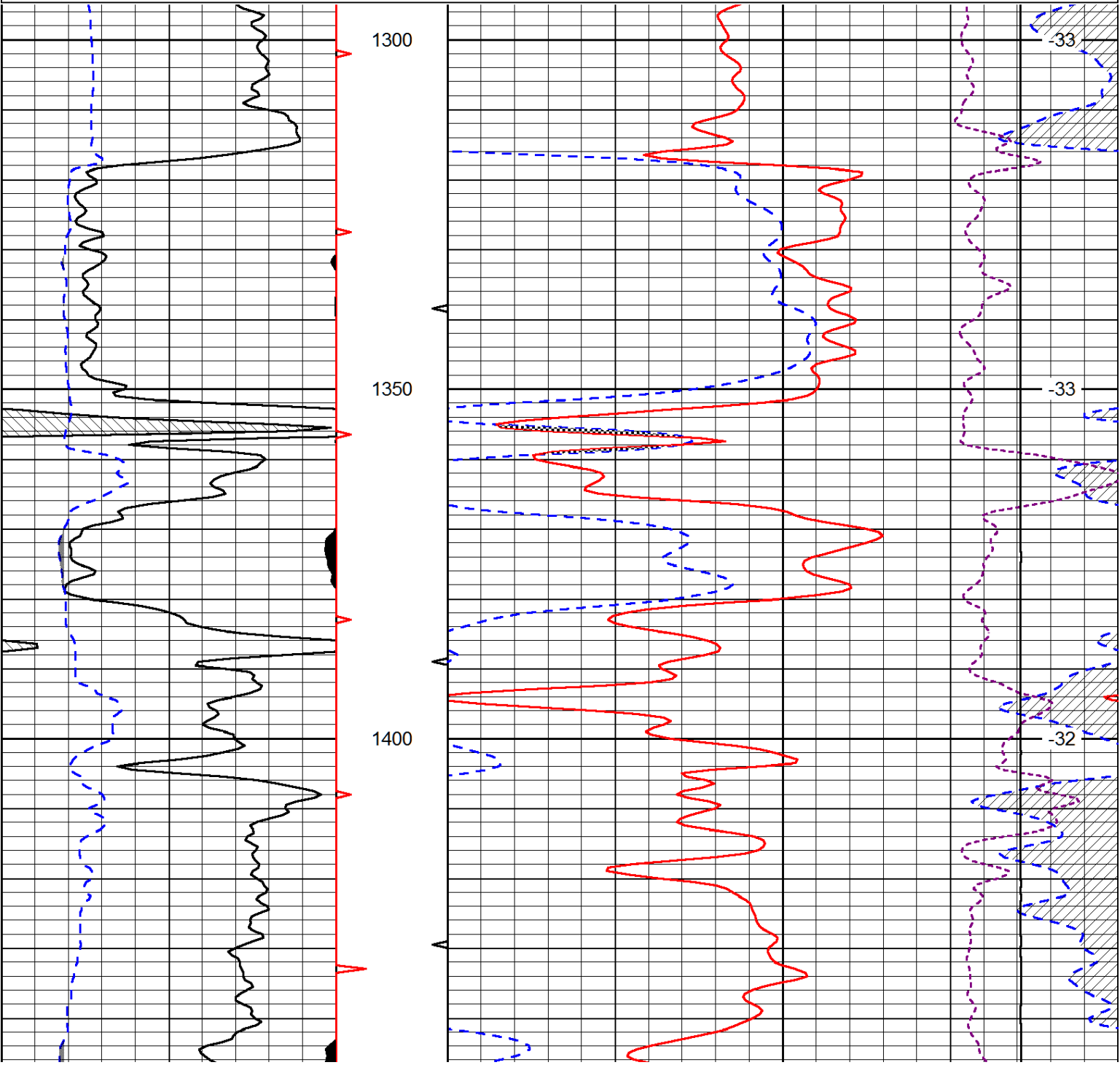
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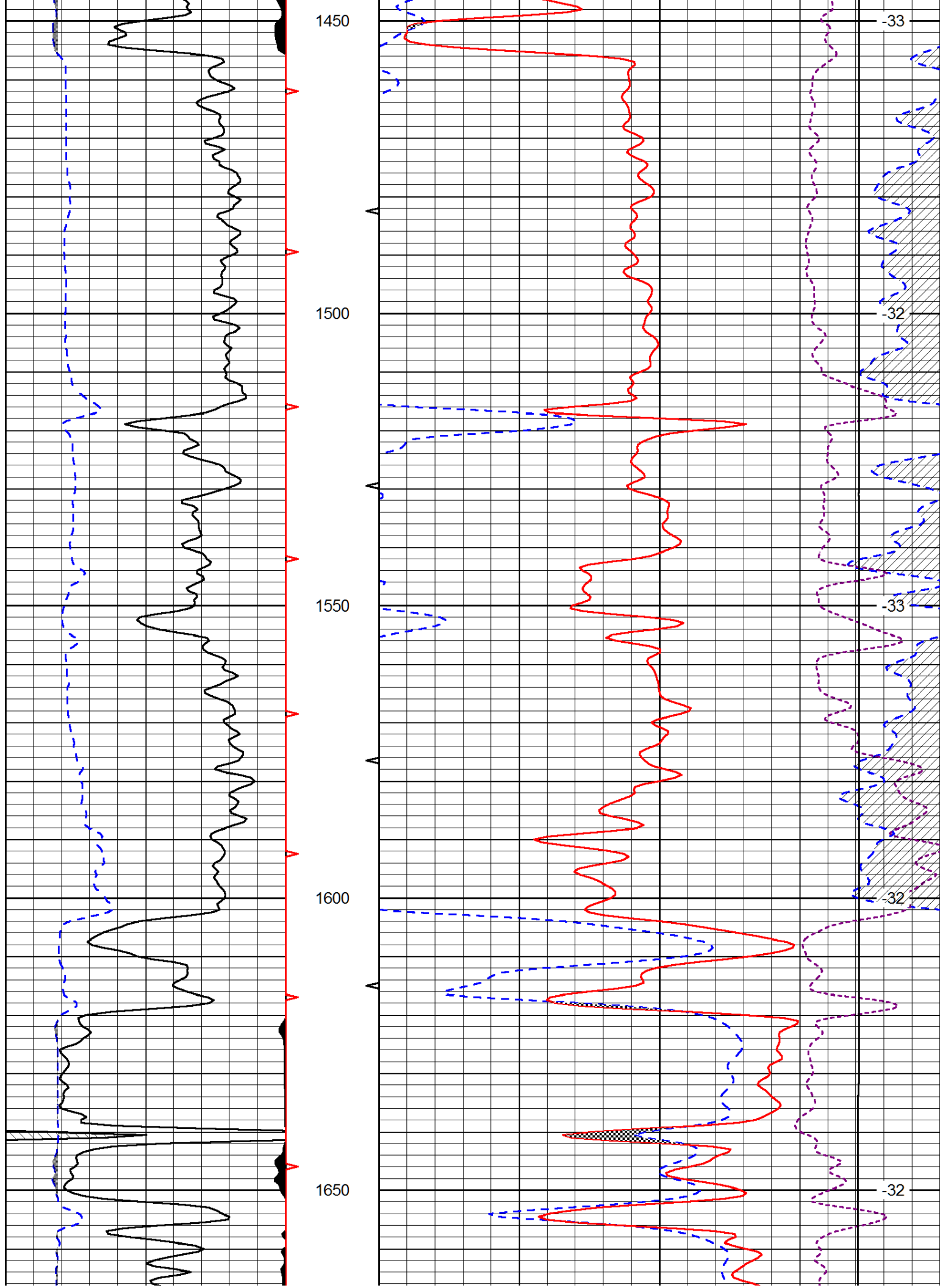
Sun Nov 23 10:16:58 2014

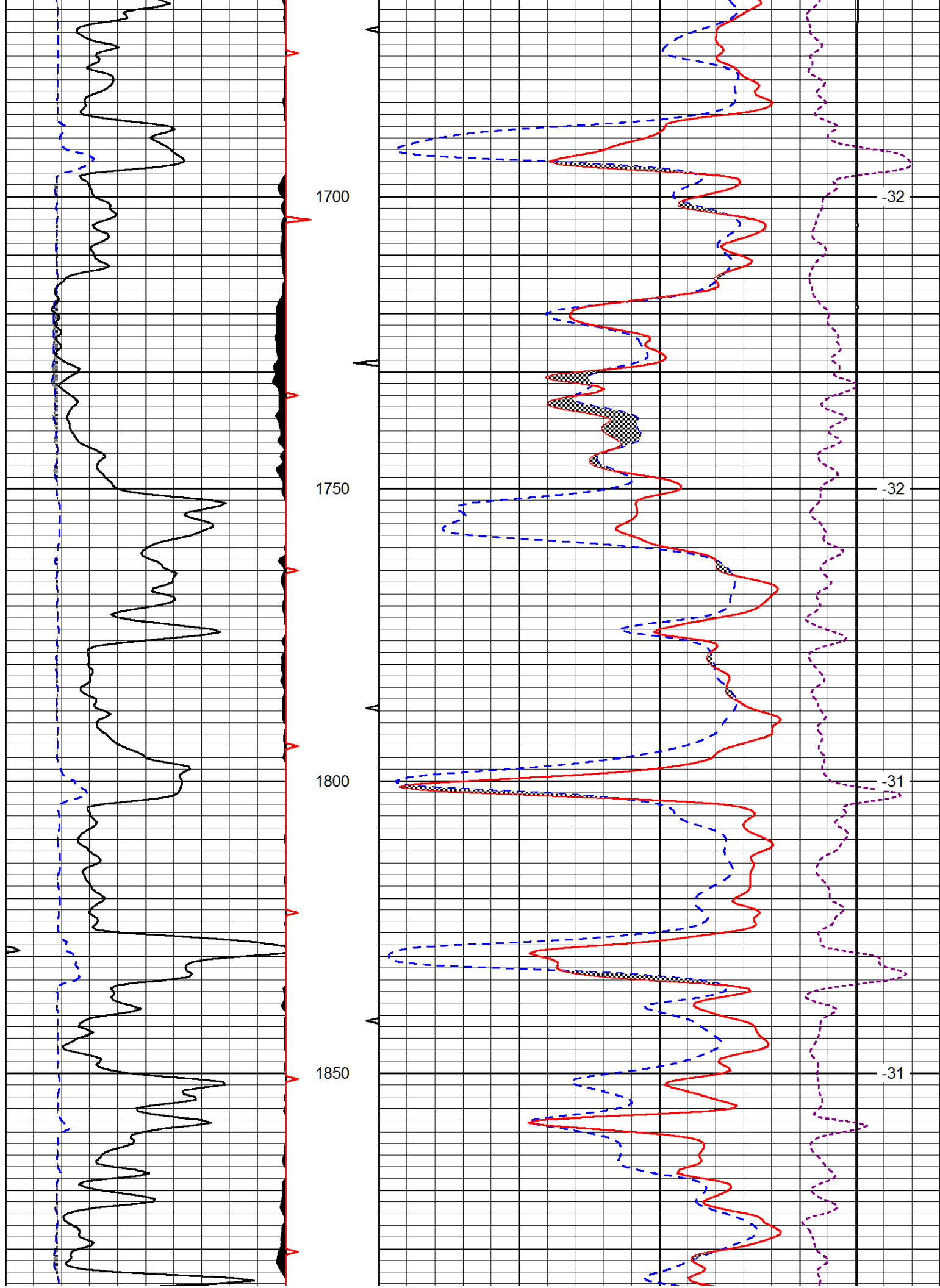
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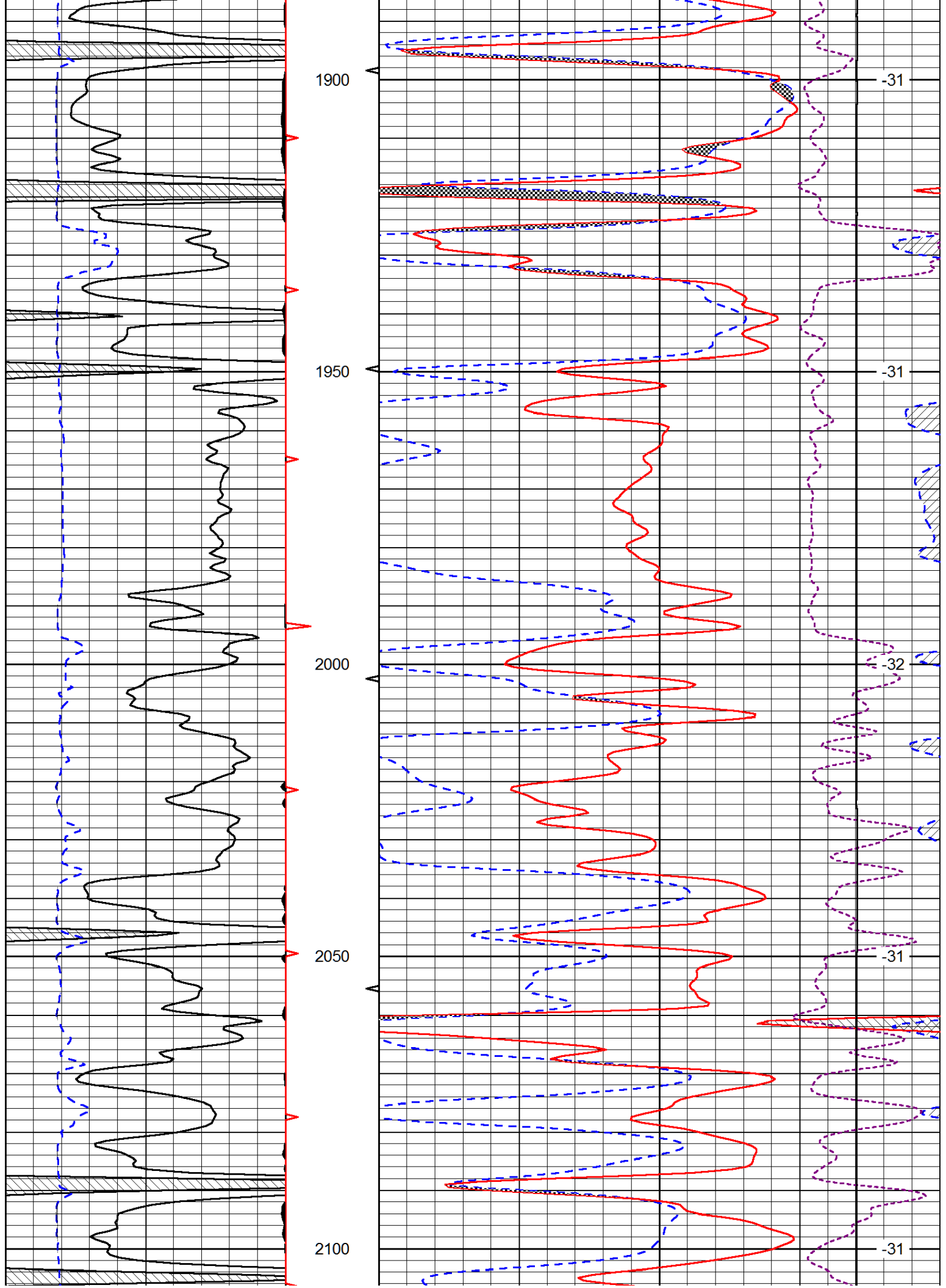
Depth in Feet scaled 1:240

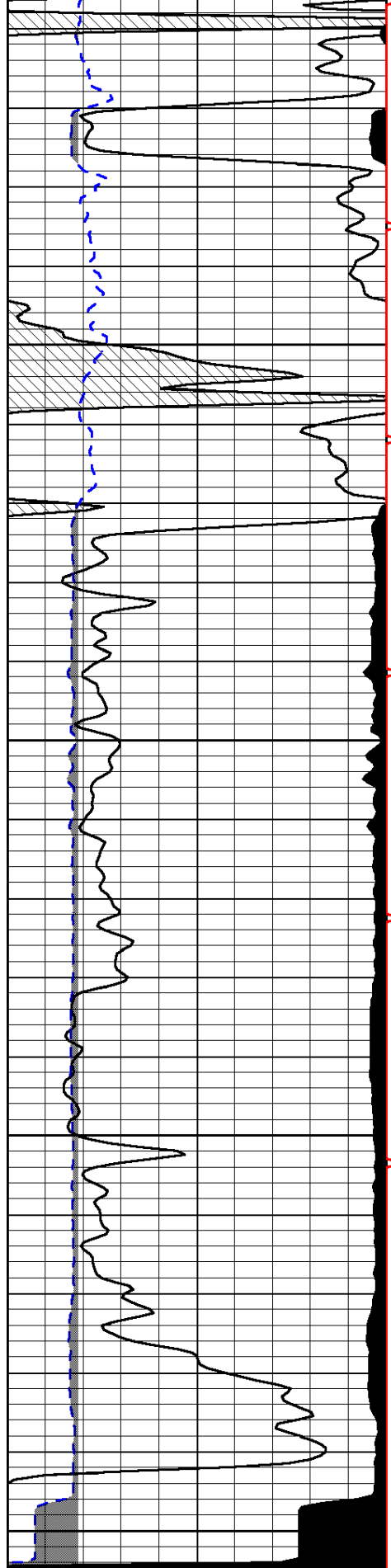
|   |                |     |       |                               |            |      |
|---|----------------|-----|-------|-------------------------------|------------|------|
| 0 | Gamma Ray      | 150 | 30    | CNLS                          |            | -10  |
| 6 | Caliper (GAPI) | 16  | 30    | Compensated Density (2.71 ma) |            | -10  |
|   |                |     | 10000 | Line Tension                  |            | 0    |
|   |                |     |       | -0.25                         | Correction | 0.25 |
|   |                |     |       |                               |            | LSPD |



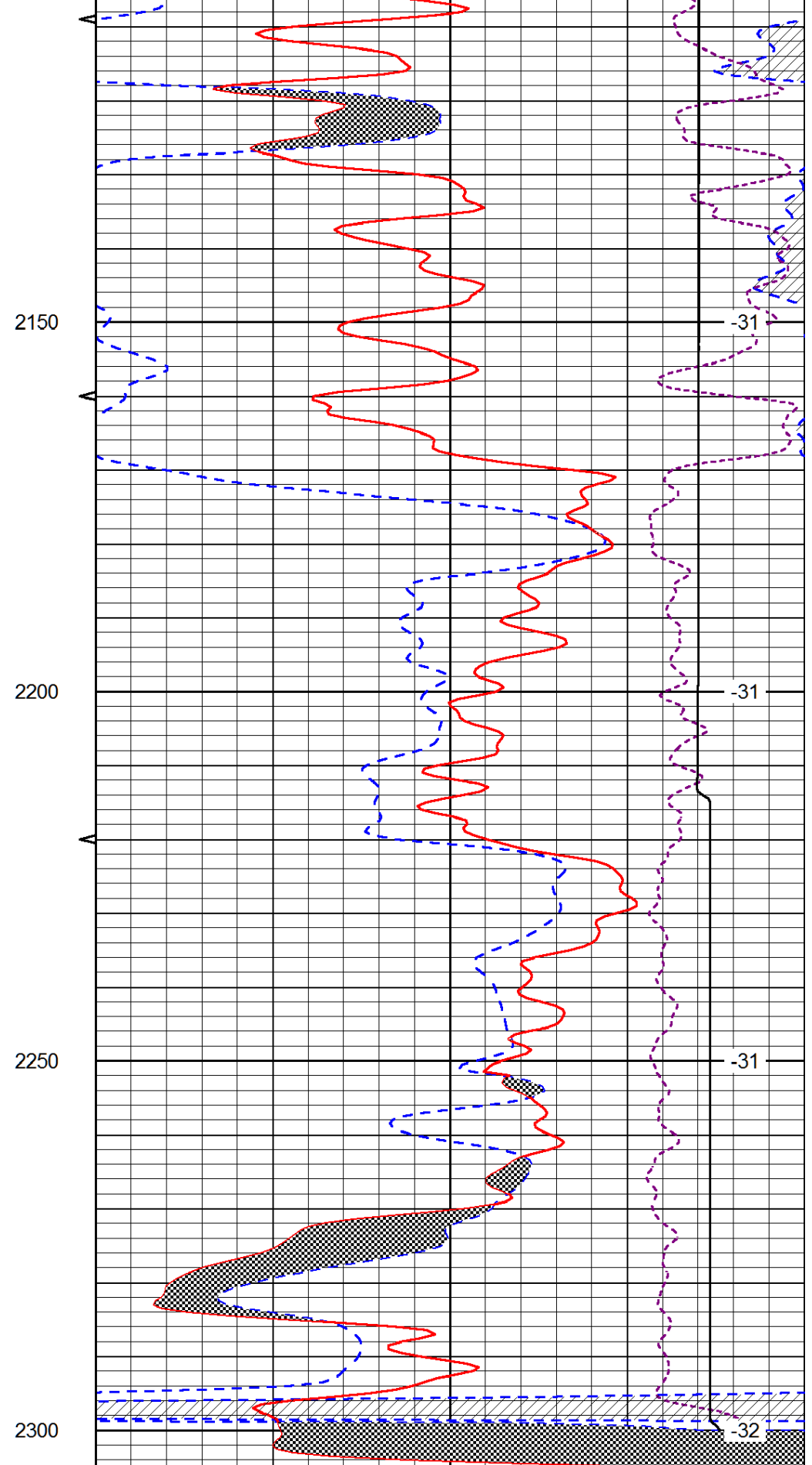








|   |                |     |
|---|----------------|-----|
| 0 | Gamma Ray      | 150 |
| 6 | Caliper (GAPI) | 16  |



|       |                               |      |
|-------|-------------------------------|------|
| 30    | CNLS                          | -10  |
| 30    | Compensated Density (2.71 ma) | -10  |
| 10000 | Line Tension                  | 0    |
| -0.25 | Correction                    | 0.25 |

[illegible]