PIONEER

Pioneer Energy Services

# Dual Induction Log

Company H&C Oil Operating, Inc.

Well Newell #23-2

Field

County Graham State Kansas

API No. 15-065-24,053-00-00

Location 600' FSL & 2,550' FEL

Sec: 23 Twp: 8S Rge: 21W

Permanent Datum Ground Level Elevation 2080

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

Drilling Measured From Kelly Bushing

Other Services: CNL/CDL, MEL

Elevation: K.B. 2088, D.F., G.L. 2080

| | | | | |
|---|---|---|---|---|
| Date | 7/28/2014 | | | |
| Run Number | One | | | |
| Depth Driller | 3621 | | | |
| Depth Logger | 3621 | | | |
| Bottom Logged Interval | 3620 | | | |
| Top Log Interval | 200 | | | |
| Casing Driller | 8.625 @ 221 | | | |
| Casing Logger | 220 | | | |
| Bit Size | 7.875 | | | |
| Type Fluid in Hole | Chemical | | | |
| Salinity,ppm CL | 4000 | | | |
| Density / Viscosity | 9.2 56 | | | |
| pH / Fluid Loss | 9.0 8.0 | | | |
| Source of Sample | Flowline | | | |
| Rm @ Meas. Temp | .66 @ 76 | | | |
| Rmf @ Meas. Temp | .50 @ 76 | | | |
| Rmc @ Meas. Temp | .89 @ 76 | | | |
| Source of Rmf / Rmc | Charts | | | |
| Rm @ BHT | .45 @ 112 | | | |
| Operating Rig Time | 3 1/2 Hours | | | |
| Max Rec. Temp. F | 112 | | | |
| Equipment Number | 108 | | | |
| Location | Hays | | | |
| Recorded By | J. Long | | | |
| Witnessed By | Marc Downing | | | |

<<< Fold Here >>>

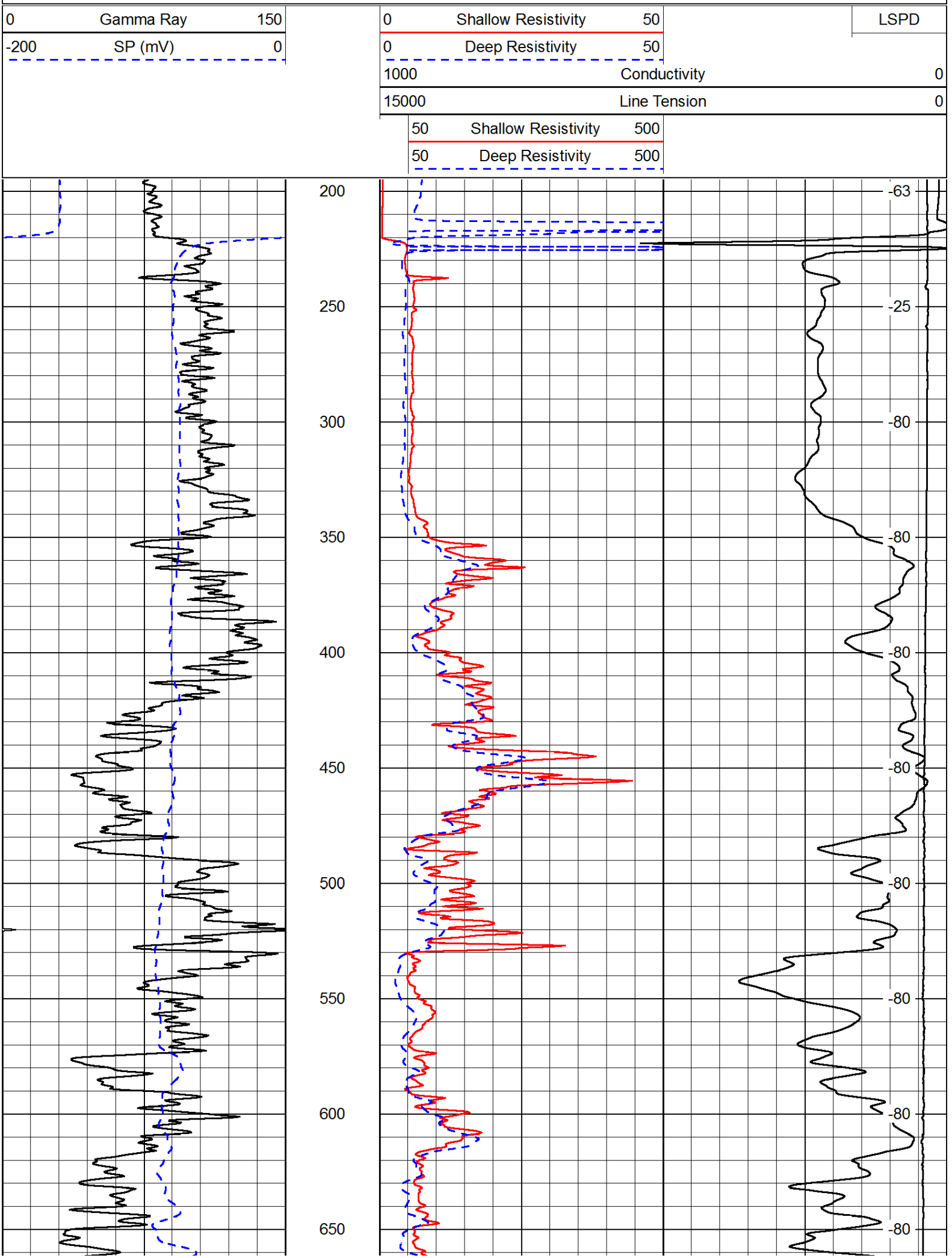
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

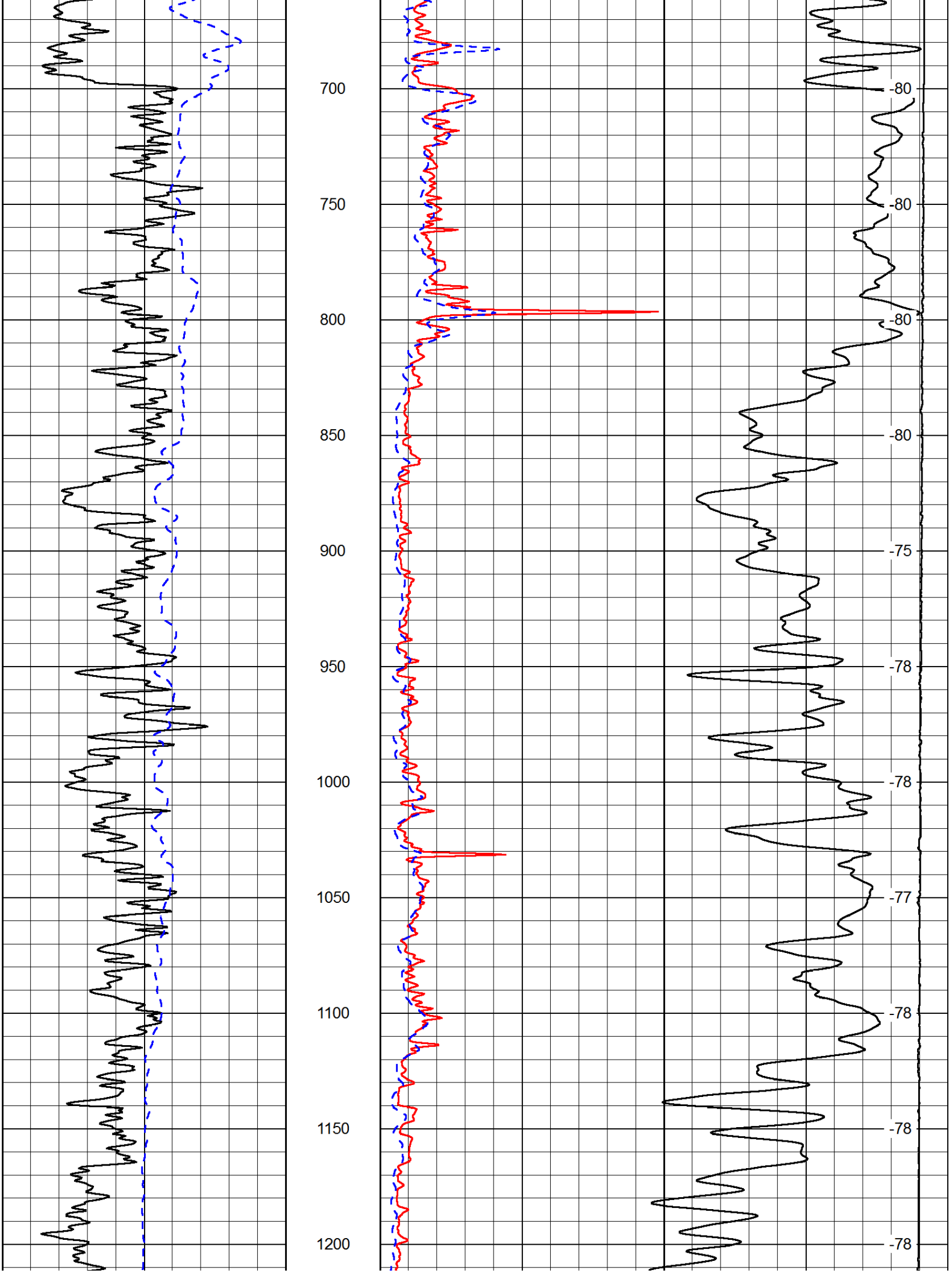
## Comments

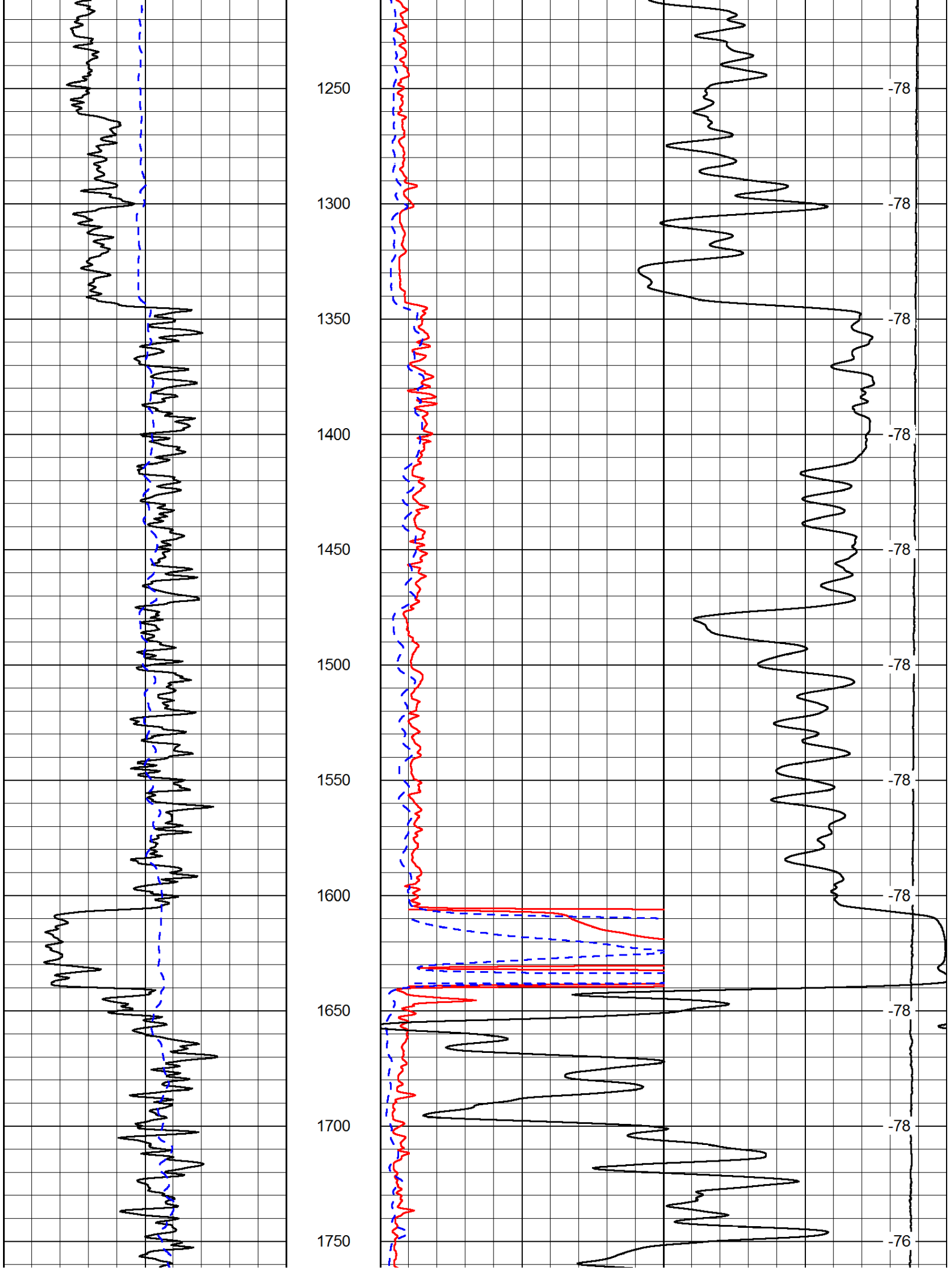
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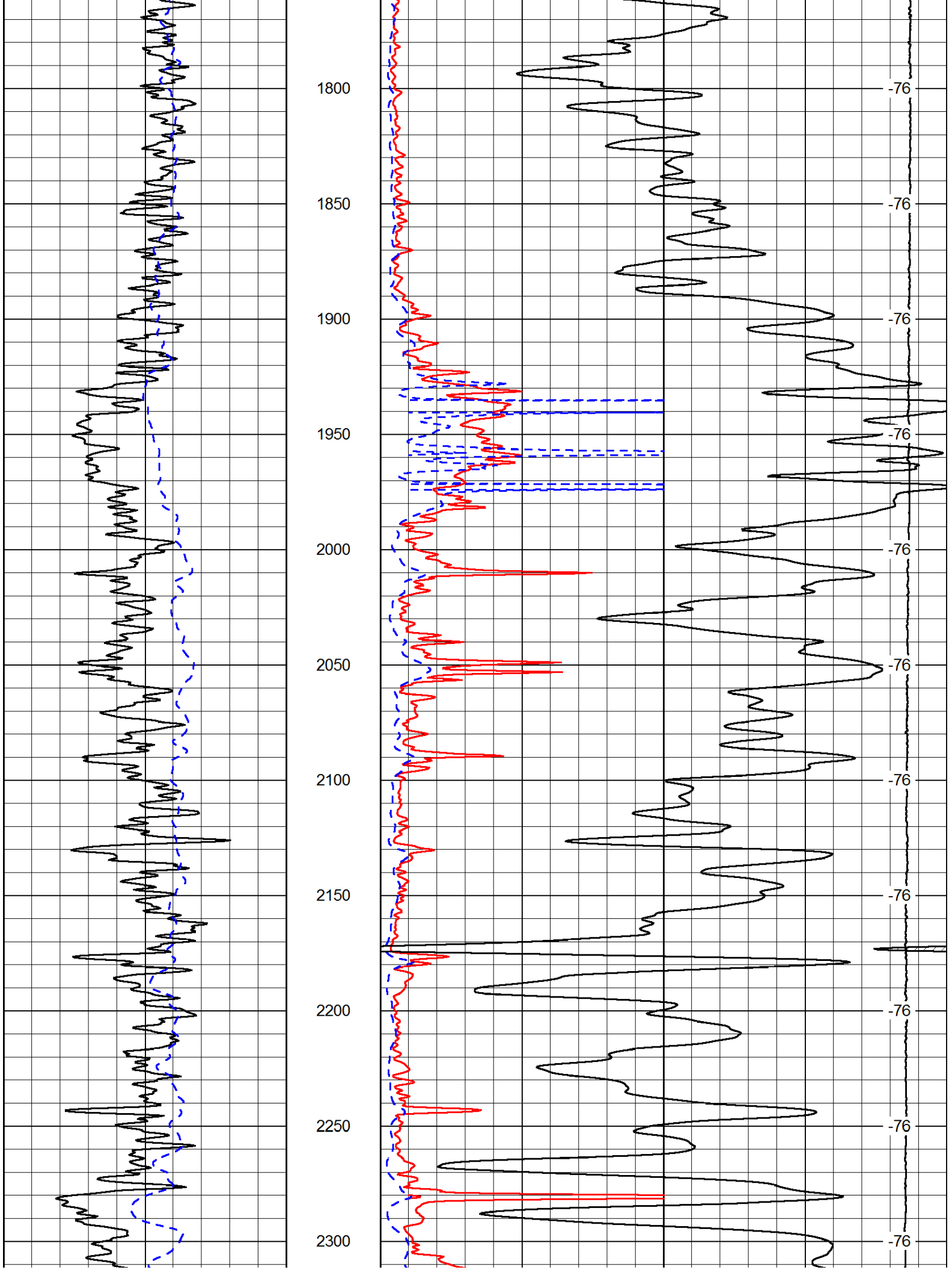
Damar, 2 1/2 Northwest on Highway 18 to Road 390, 1/4 South, 1/3 West, Northwest Into

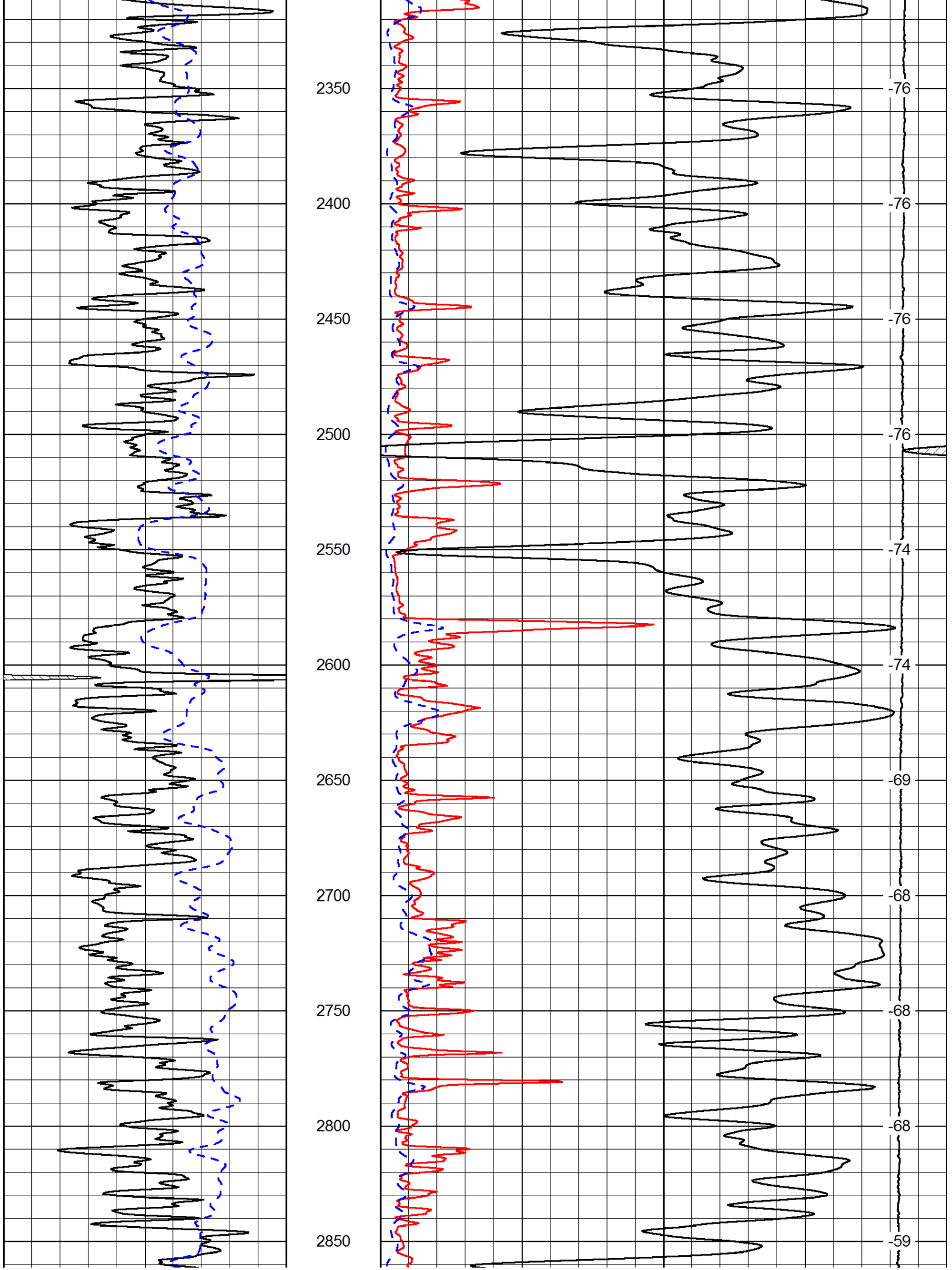
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| Presentation Format: | dil2in |
| Dataset Creation: | Mon Jul 28 05:48:15 2014 |
| Charted by: | Depth in Feet scaled 1:600 |

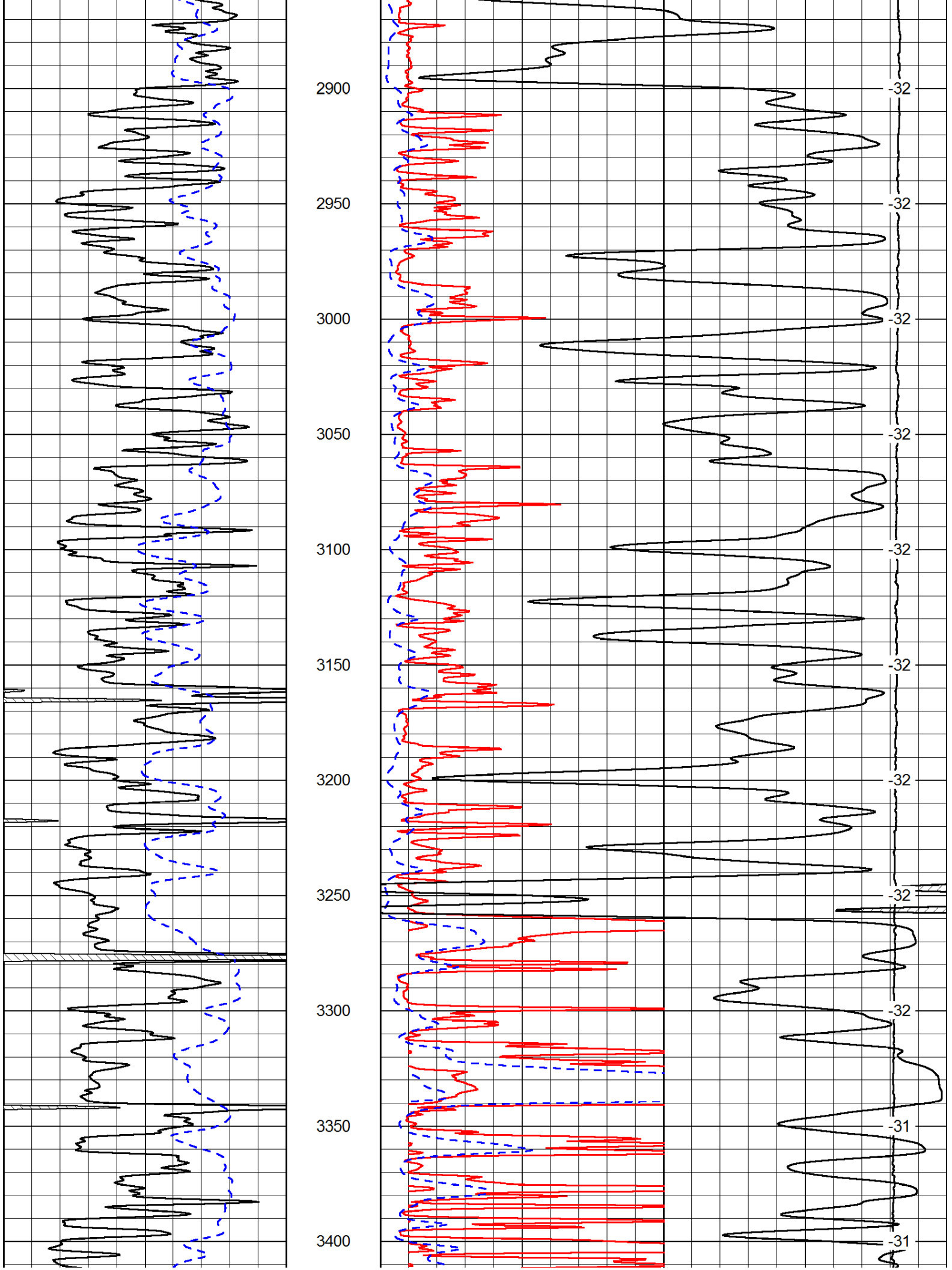

0 Gamma Ray 150
-200 SP (mV) 0
0 Shallow Resistivity 50
0 Deep Resistivity 50
1000 Conductivity 0
15000 Line Tension 0
50 Shallow Resistivity 500
50 Deep Resistivity 500
LSPD
200
250
300
350
400
450
500
550
600
650
-63
-25
-80
-80
-80
-80
-80
-80
-80

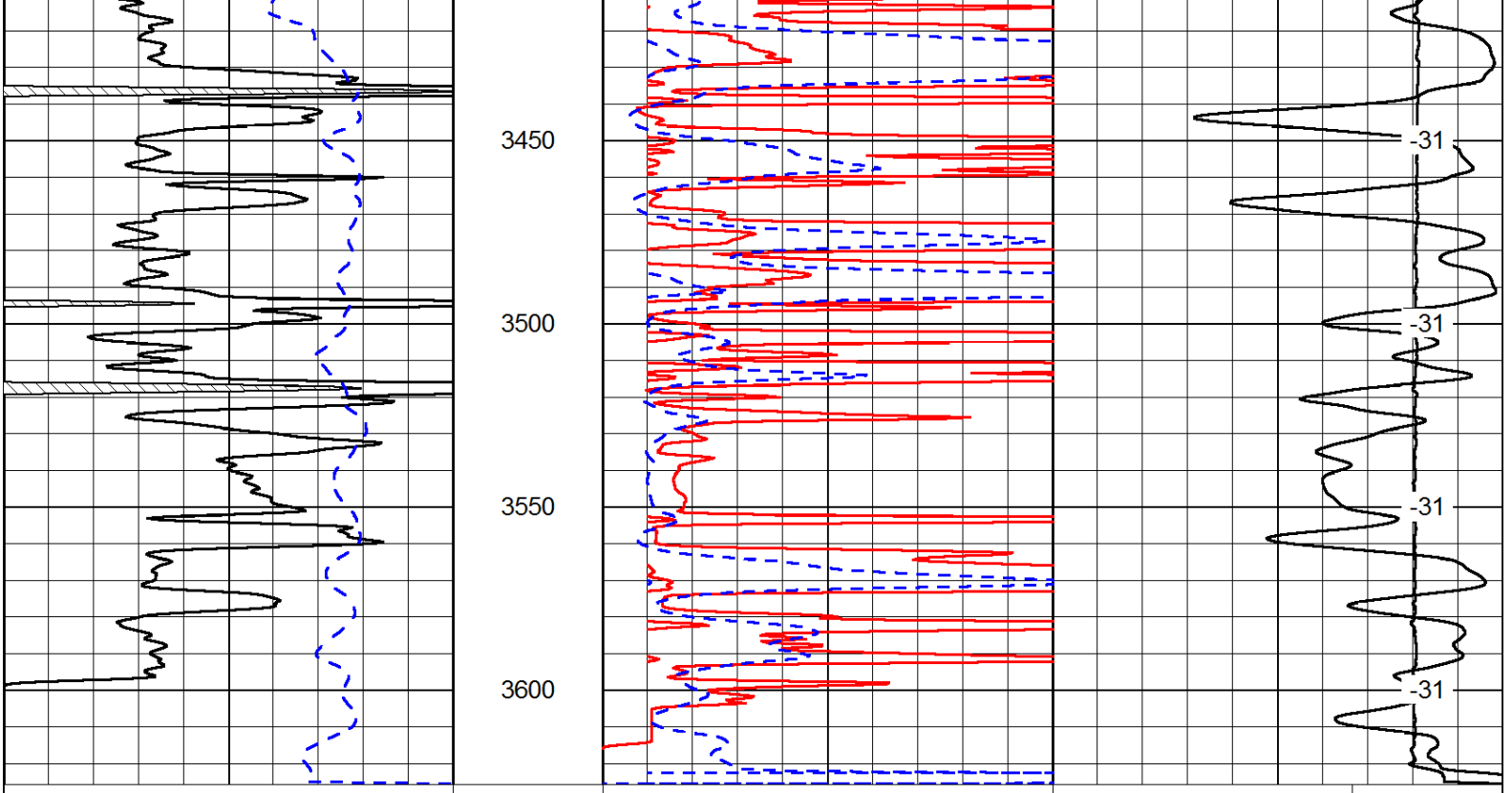

700
750
800
850
900
950
1000
1050
1100
1150
1200
-80
-80
-80
-75
-78
-78
-77
-78
-78
-78


1250
1300
1350
1400
1450
1500
1550
1600
1650
1700
1750
-78
-78
-78
-78
-78
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-78
-78
-78
-76

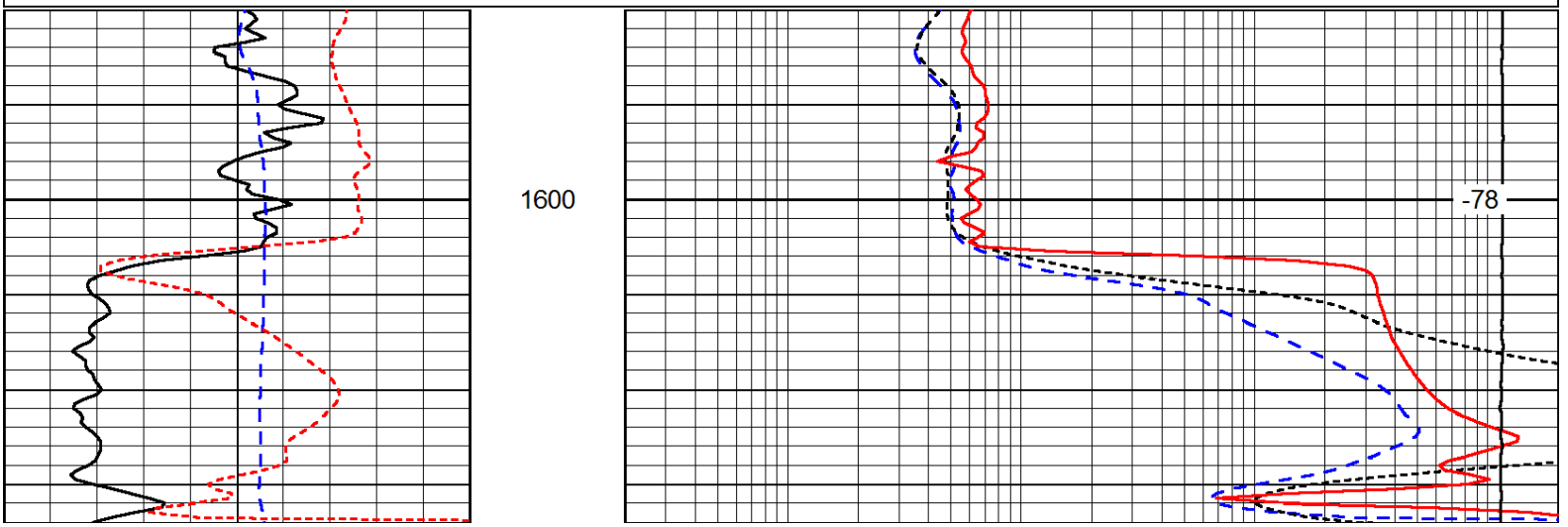

1800
1850
1900
1950
2000
2050
2100
2150
2200
2250
2300
-76
-76
-76
-76
-76
-76
-76
-76
-76
-76

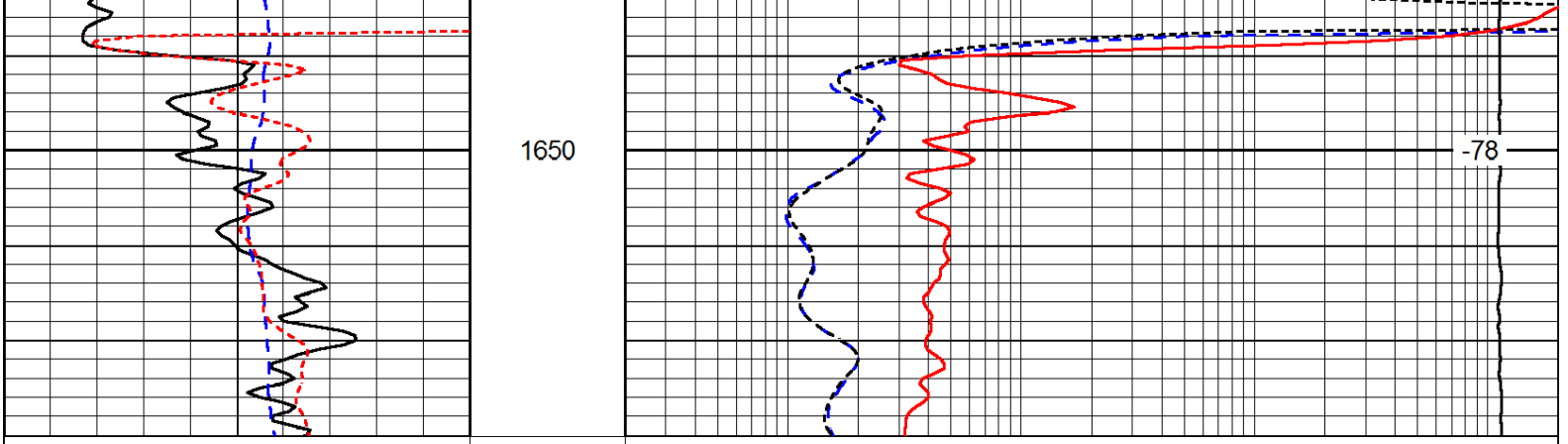

2350
2400
2450
2500
2550
2600
2650
2700
2750
2800
2850
-76
-76
-76
-74
-74
-69
-68
-68
-68
-59


2900
2950
3000
3050
3100
3150
3200
3250
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-32
-32
-31
-31

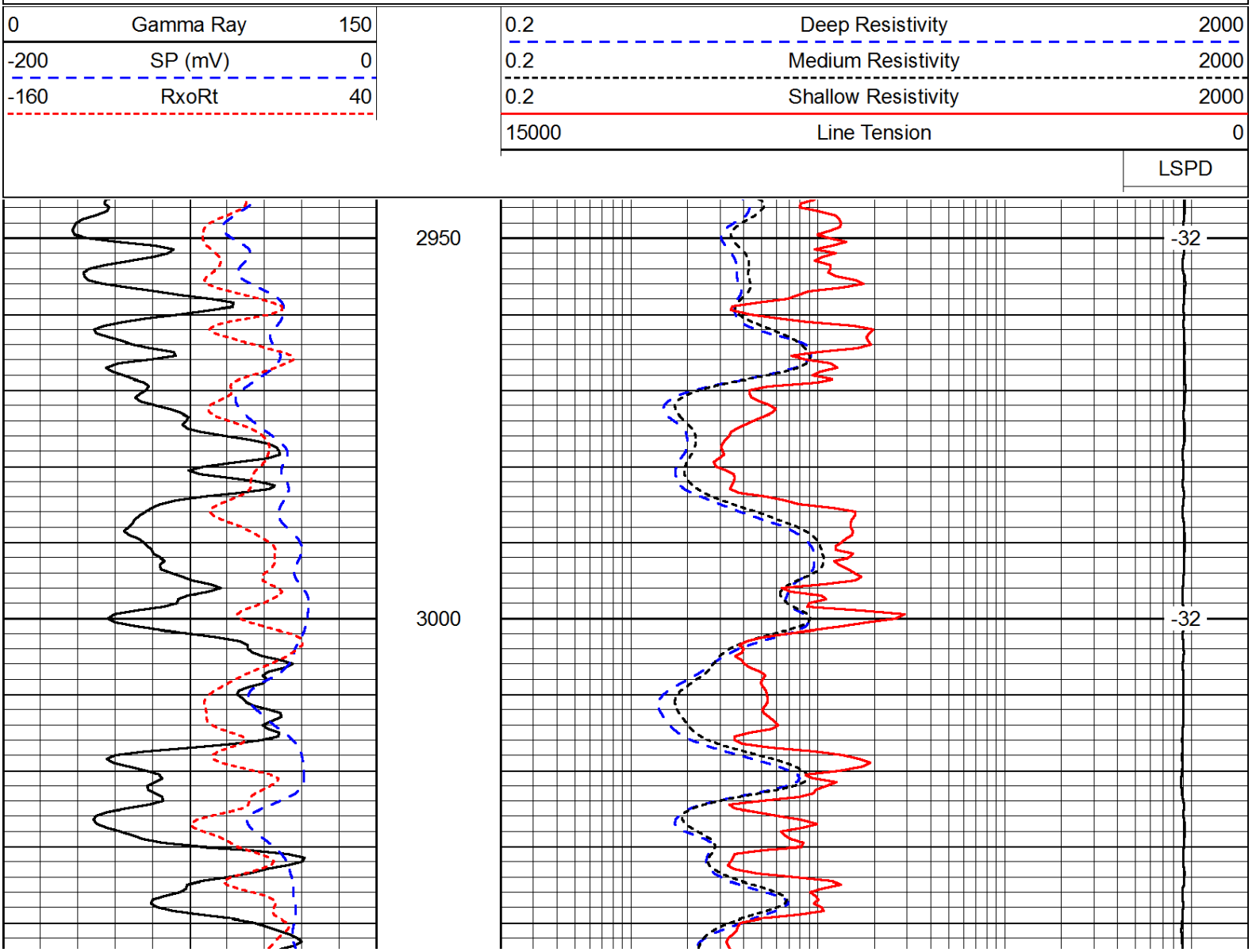


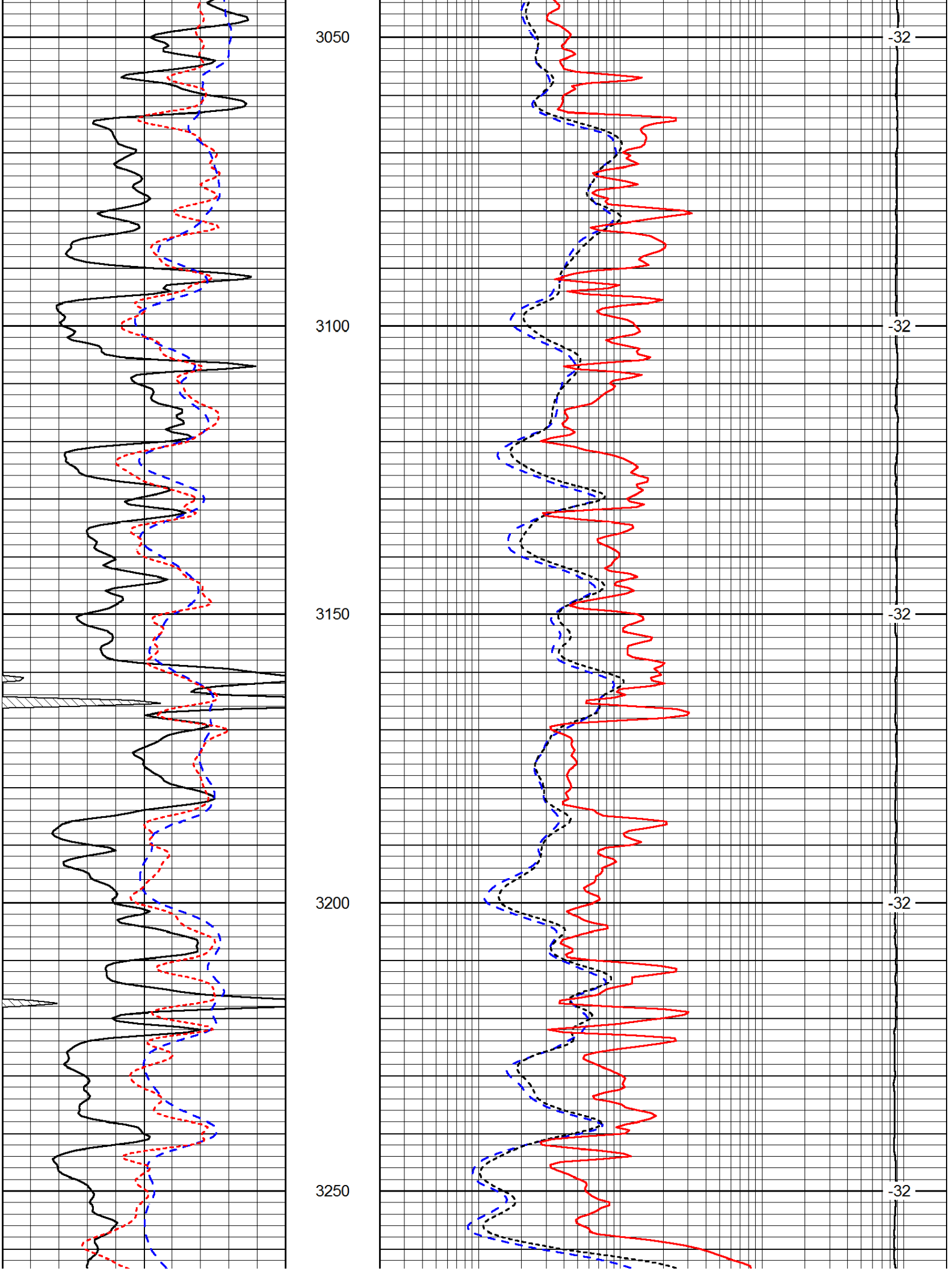

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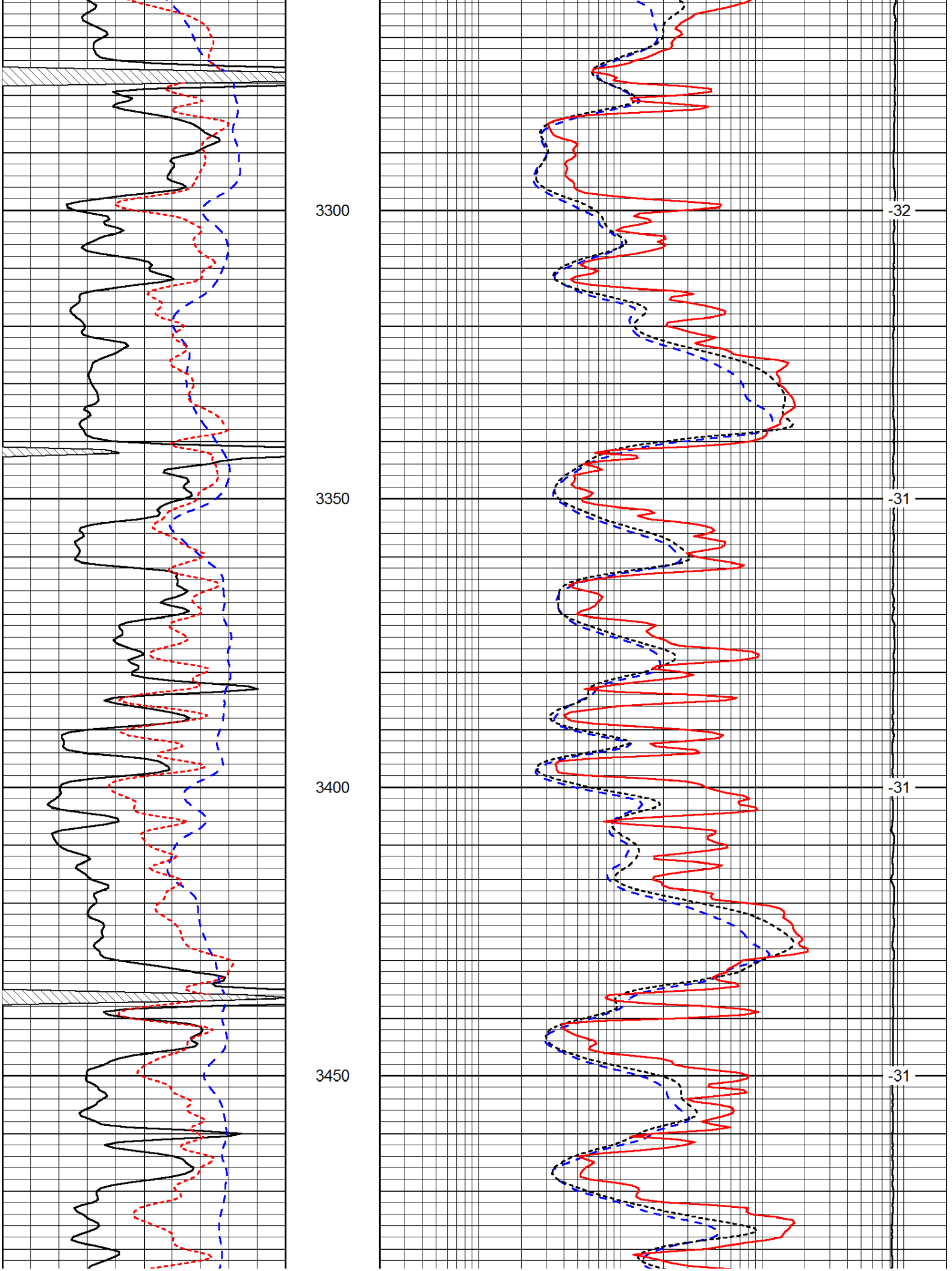


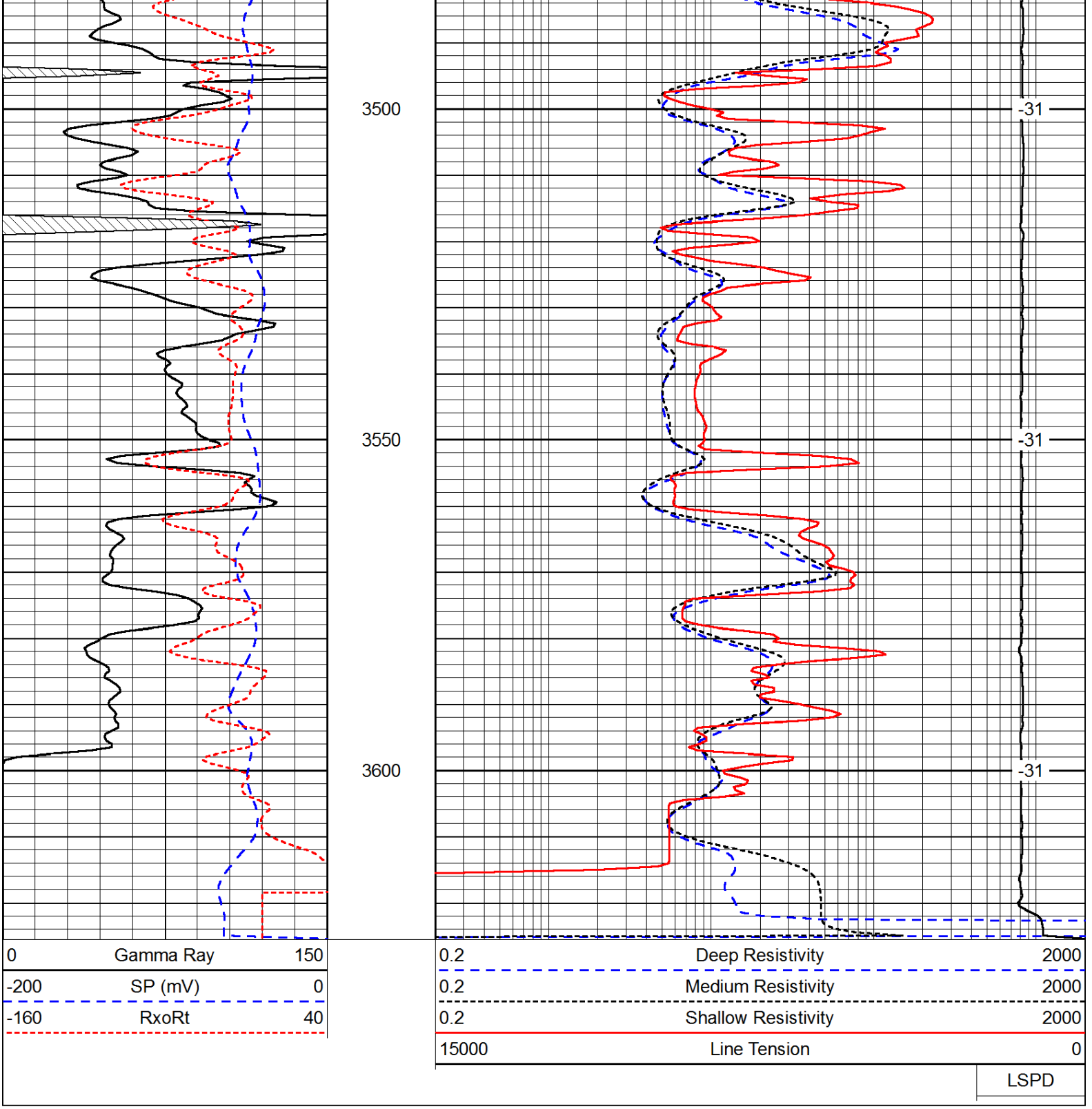



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| Presentation Format: | dil |
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| Charted by: | Depth in Feet scaled 1:240 |




3050
3100
3150
3200
3250
-32
-32
-32
-32
-32


3300
3350
3400
3450
-32
-31
-31
-31




| | | |
|---|---|---|
| 0 | Gamma Ray | 150 |
| -200 | SP (mV) | 0 |
| -160 | RxoRt | 40 |

| | | |
|---|---|---|
| 0.2 | Deep Resistivity | 2000 |
| 0.2 | Medium Resistivity | 2000 |
| 0.2 | Shallow Resistivity | 2000 |
| 15000 | Line Tension | 0 |

LSPD