



MIDWEST WIRELINE

# DUAL COMP POROSITY LOG

Company **Howell Oil Company, Inc.**  
 Well **Dole #6**  
 Field **Burton**  
 County **Reno** State **Kansas**

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 Well **Dole #6**  
 Field **Burton**  
 County **Reno**  
 State **Kansas**

Location: **API #: 15-155-21779-00-00**  
**1600' FSL & 1065' FEL**  
**SEC 13 TWP 23S RGE 4W**  
 Permanent Datum **Ground Level** Elevation **1468'**  
 Log Measured From **Kelly Bushing**  
 Drilling Measured From **Kelly Bushing**  
 Other Services **CNL/CDL**  
 K.B. **1480'**  
 D.F. **N/A**  
 G.L. **1468'**

Date	9/30/2020						
Run Number	One						
Type Log	CNL/CDL						
Depth Driller	3561'						
Depth Logger	3558'						
Bottom Logged Interval	3537'						
Top Logged Interval	300'						
Type Fluid In Hole	Chemical						
Salinity, PPM CL	2110						
Density	9.55						
Level	Full						
Max. Rec. Temp. F	112						
Operating Rig Time	2 Hours						
Equipment -- Location	P-24 HAYS						
Recorded By	D. Schmidt						
Witnessed By	Larry Ressler						
Borehole Record							
Run No.	Bit	From	To	Size	Wgt.	From	To
One	17.25"	0'	302'	13.375"	N/A	0'	302'
Two	7.875"	302'	TD				
Casing Record							

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All interpretations are opinions based on inferences from electrical or other measurements and Midwest Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Midwest Wireline Services, LLC will not 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.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

Burton,  
 West to Woodberry, 1 North, 1/2 West,  
 North into

Log Measured From: Kelly Bushing 12 Ft. Above Permanent Datum

THANK YOU FOR USING MIDWEST WIRELINE LLC  
 785-625-3858

Your Midwest Wireline Crew		This Log Record Was Witnessed By	
Engineer: D. Schmidt	Operator:	Primary Witness: Larry Ressler	Secondary Witness: Roger Martin
Operator:	Operator:	Secondary Witness:	Secondary Witness:
Operator:		Secondary Witness:	

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	33.00		GR-M&W (89)	3.00	3.50	50.00
CNLSC CNSSC	29.90 29.15		CNT-M&W (207-MW)	5.50	3.50	100.00
LSD DCAL SSD	20.85 20.83 20.35		CDL-M&W (126-4040)	8.50	4.00	250.00
RLL3F RLL3	15.80 15.80		DIL-PSI HIGH TEMP (952-828)	18.50	3.50	220.00
CILD	8.00					
CILM	4.70					
SP	0.20					

Dataset: howell\_dole 6.db: field/well/STACK/pass4.1  
 Total length: 35.50 ft  
 Total weight: 620.00 lb  
 O.D.: 4.00 in

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\howell\_dole 6.db  
Dataset field/well/STACK/pass4.1/\_vars\_

## Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 100	in 5.5	in 0	g/cc 1	2	g/cc 2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m 0	mmho/m 0	mV 220	degF 0	Off	ft 0

## Variable Description

A : Cement Factor (a)  
BOREID : Borehole I.D.  
BOTTEMP : Bottom Hole Temperature  
CASEOD : Casing O.D.  
CASETHCK : Casing Thickness  
FLUIDDEN : Fluid Density  
M : Cement Exp (m)  
MATRXDEN : Matrix Density

NPORSEL : Neutron Porosity Curve Select  
PERFS : Perforation Flag  
SNDERR : Deep Sonde Error Correction  
SNDERRM : Medium Sonde Error Correction  
SPSHIFT : S.P. Baseline Offset  
SRFTEMP : Surface Temperature  
SZCOR : CN Size Cor. ?  
TDEPTH : Total Depth



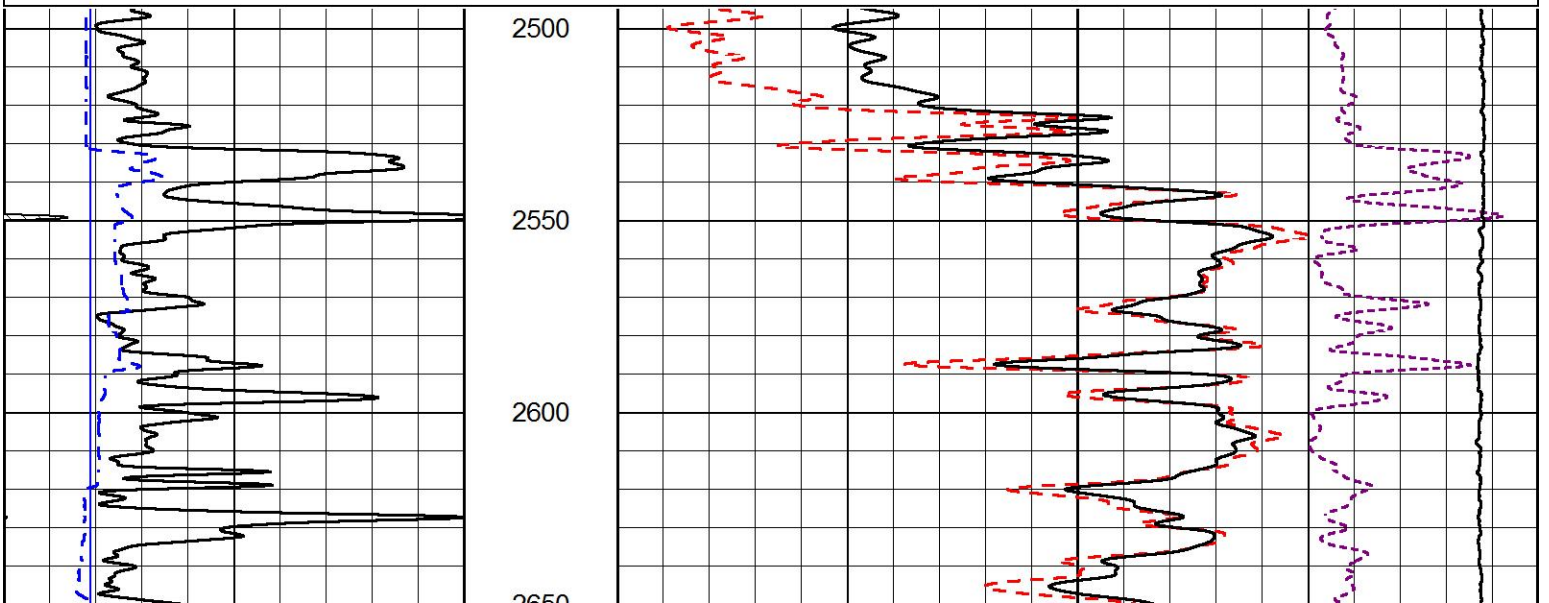
MIDWEST WIRELINE

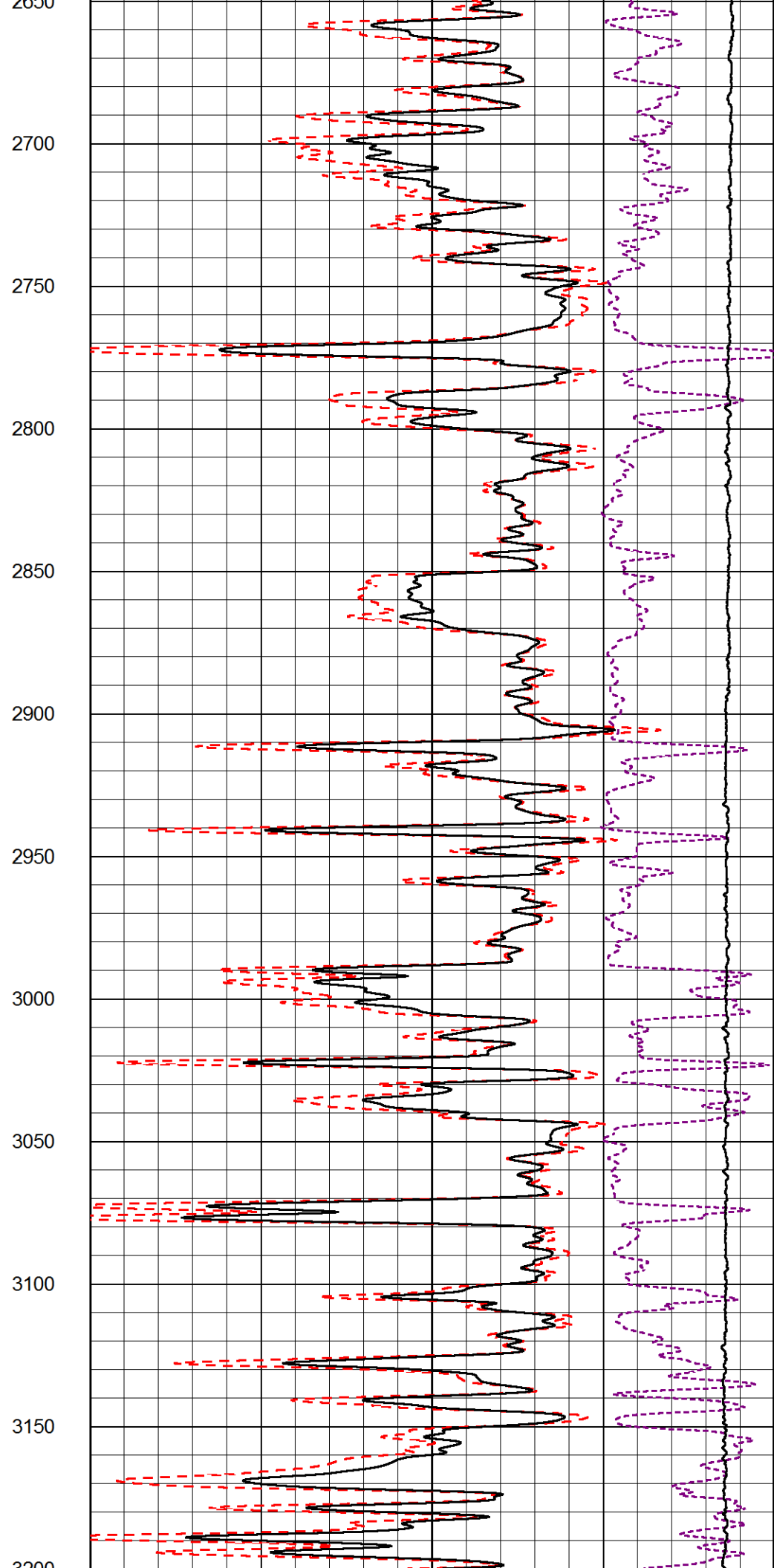
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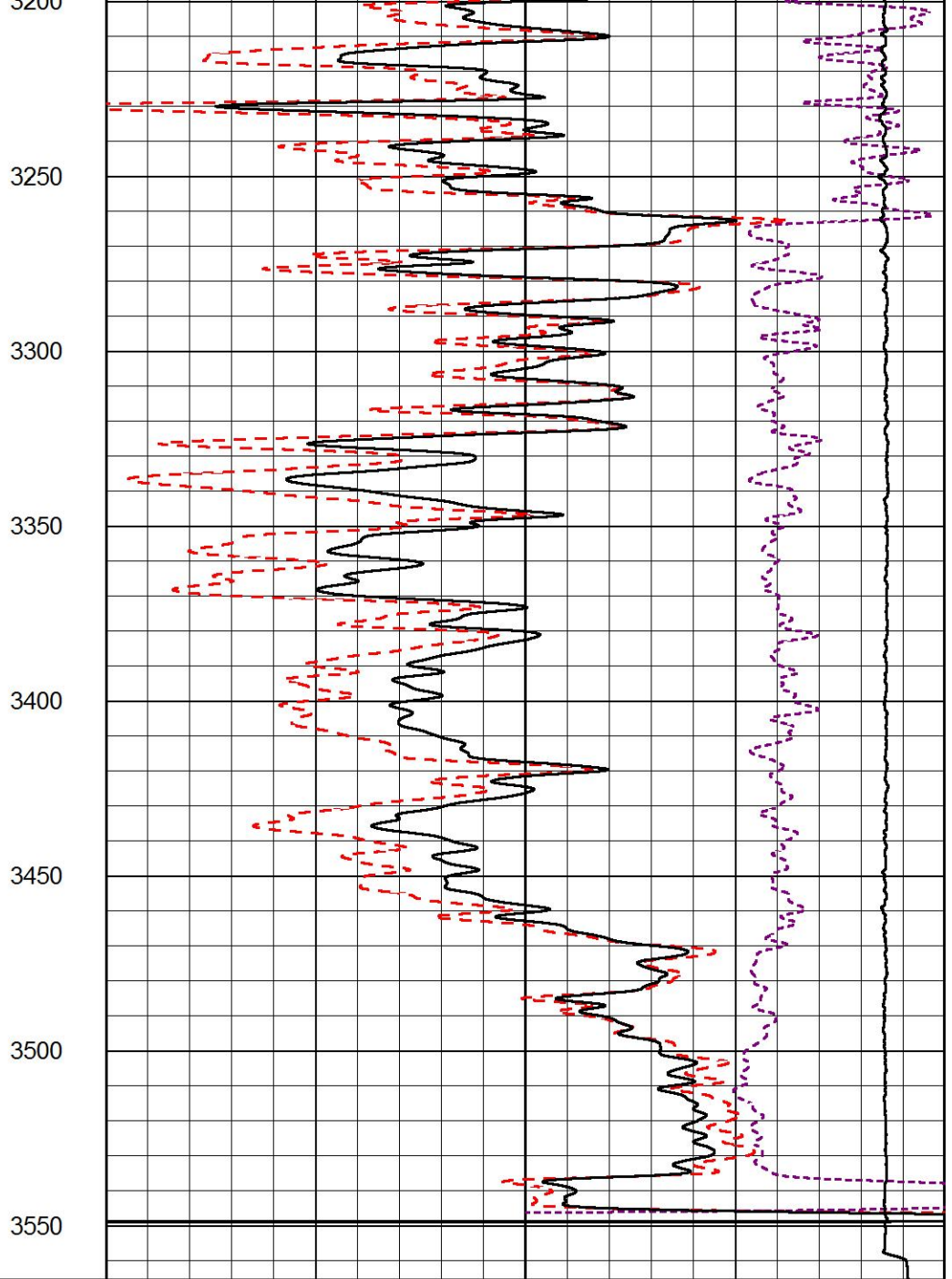
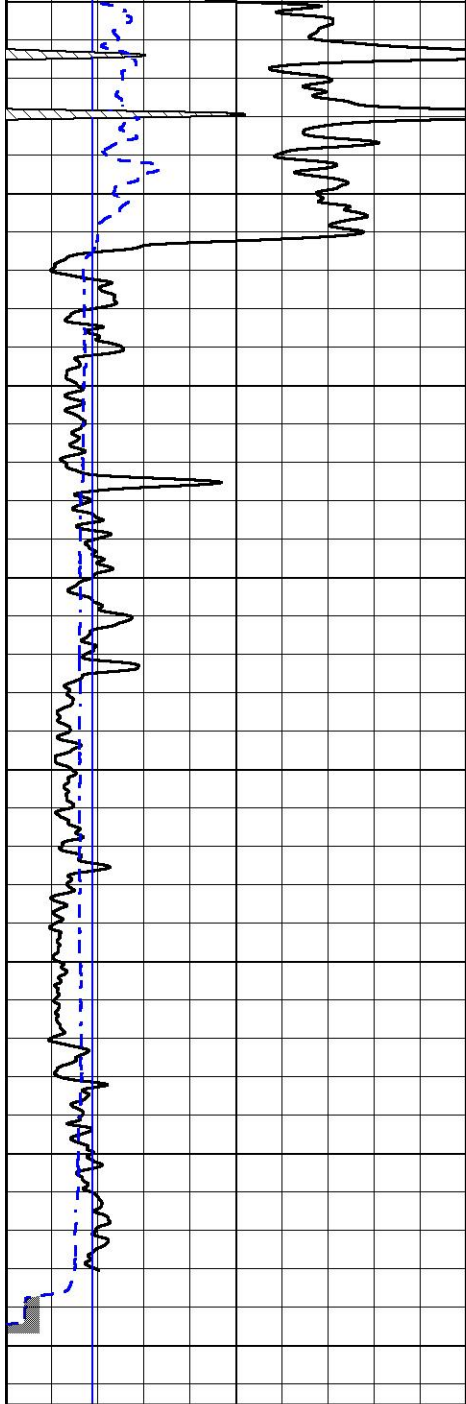
Database File        howell\_dole 6.db  
Dataset Pathname    STACK/pass4.1  
Presentation Format    \_cdl  
Dataset Creation     Wed Sep 30 09:56:53 2020  
Charted by            Depth in Feet scaled 1:600

0	GAMMA RAY (GAPI)	150
6	DCAL (in)	16

COMPENSATED DENSITY (2.71 MA)	
30	(pu) -10
2	BULK DENSITY (g/cc) 3
15000	LINE TENSION (lb) 0
-0.25	CORRECTION (g/cc) 0.25







0      GAMMA RAY (GAPI)      150  
 6      DCAL (in)      16

COMPENSATED DENSITY  
 (2.71 MA)

30      (pu)      -10

2      BULK DENSITY (g/cc)      3

15000      LINE TENSION (lb)      0

-0.25      CORRECTION (g/cc)      0.25



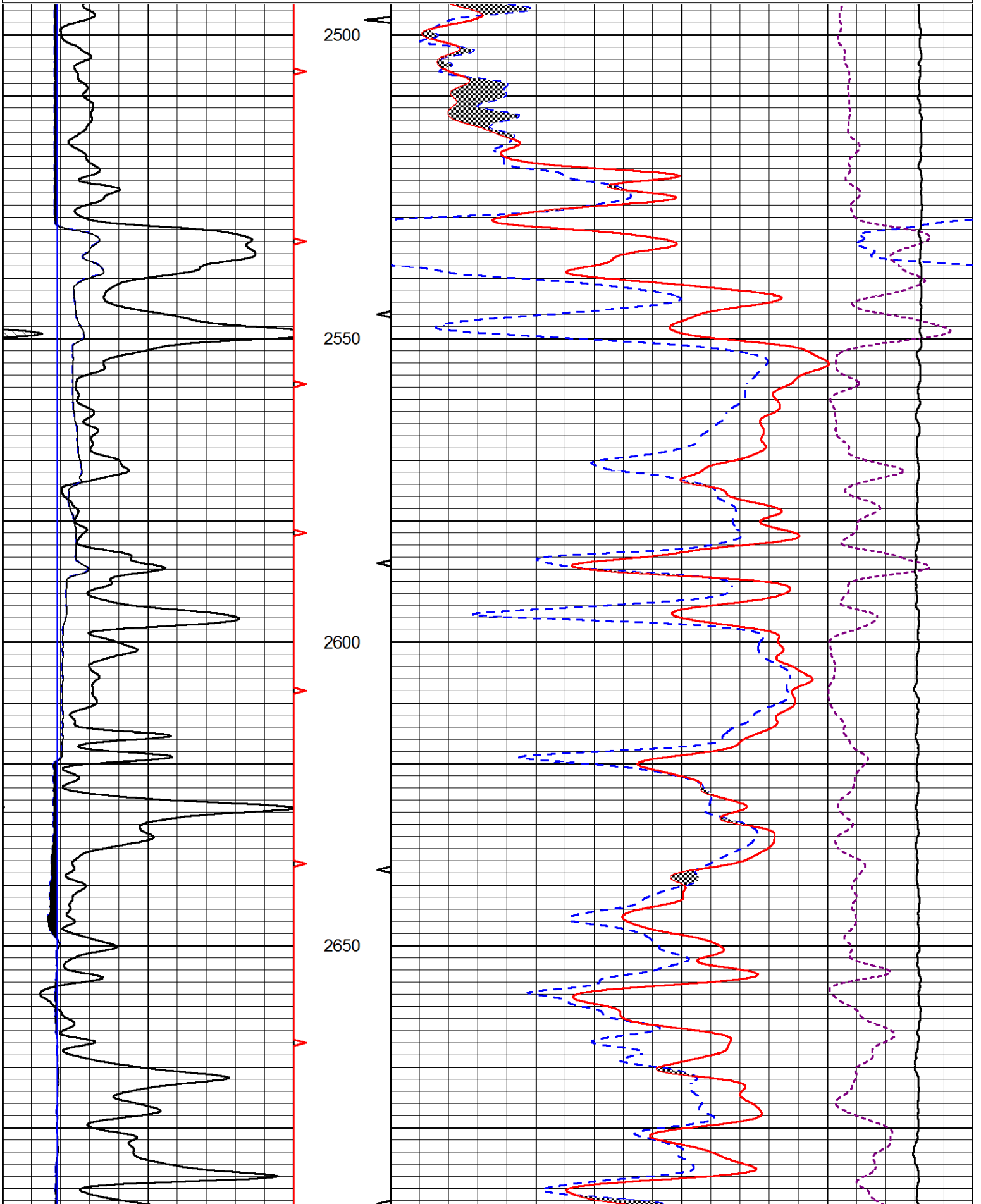
MIDWEST WIRELINE

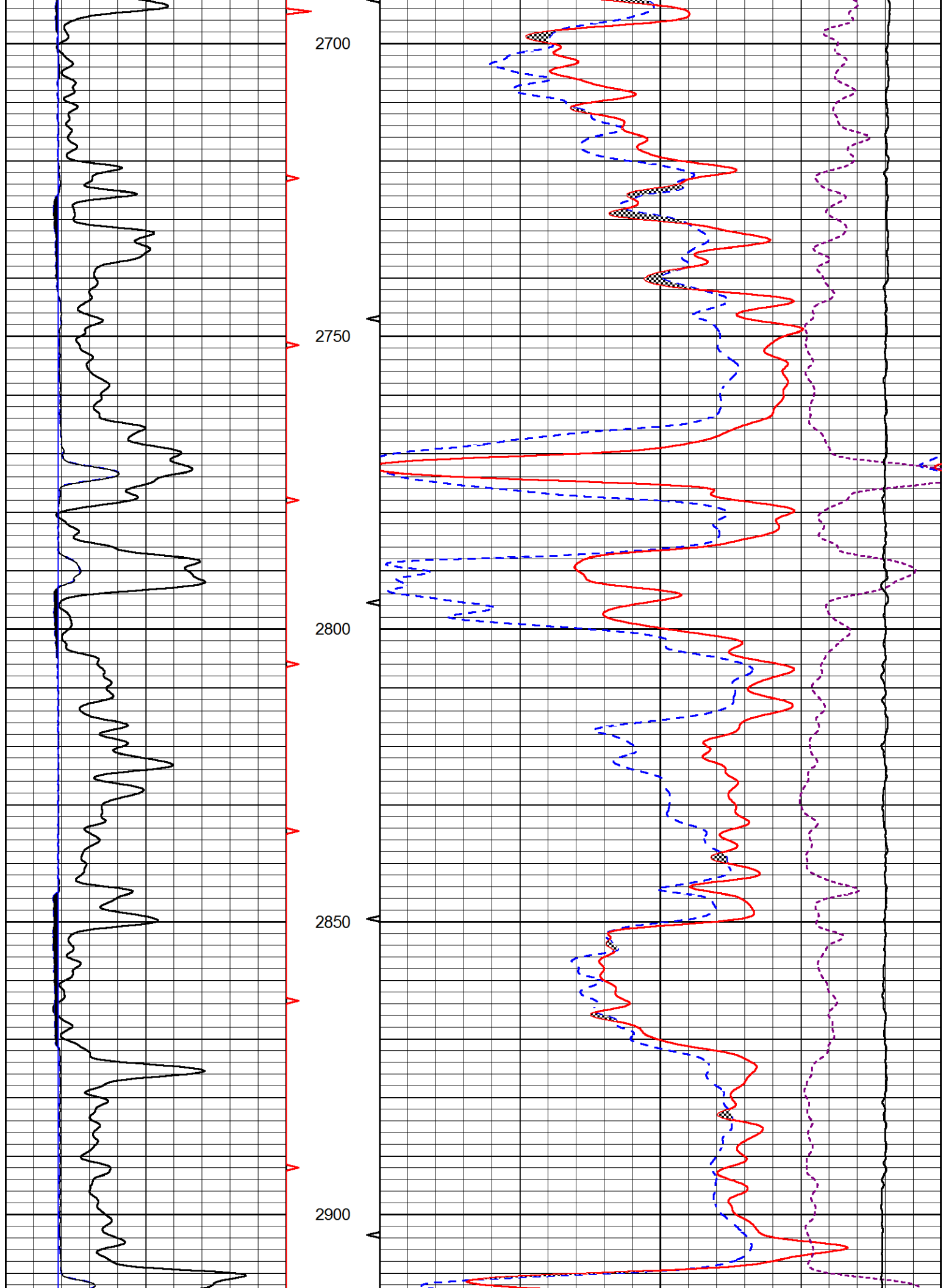
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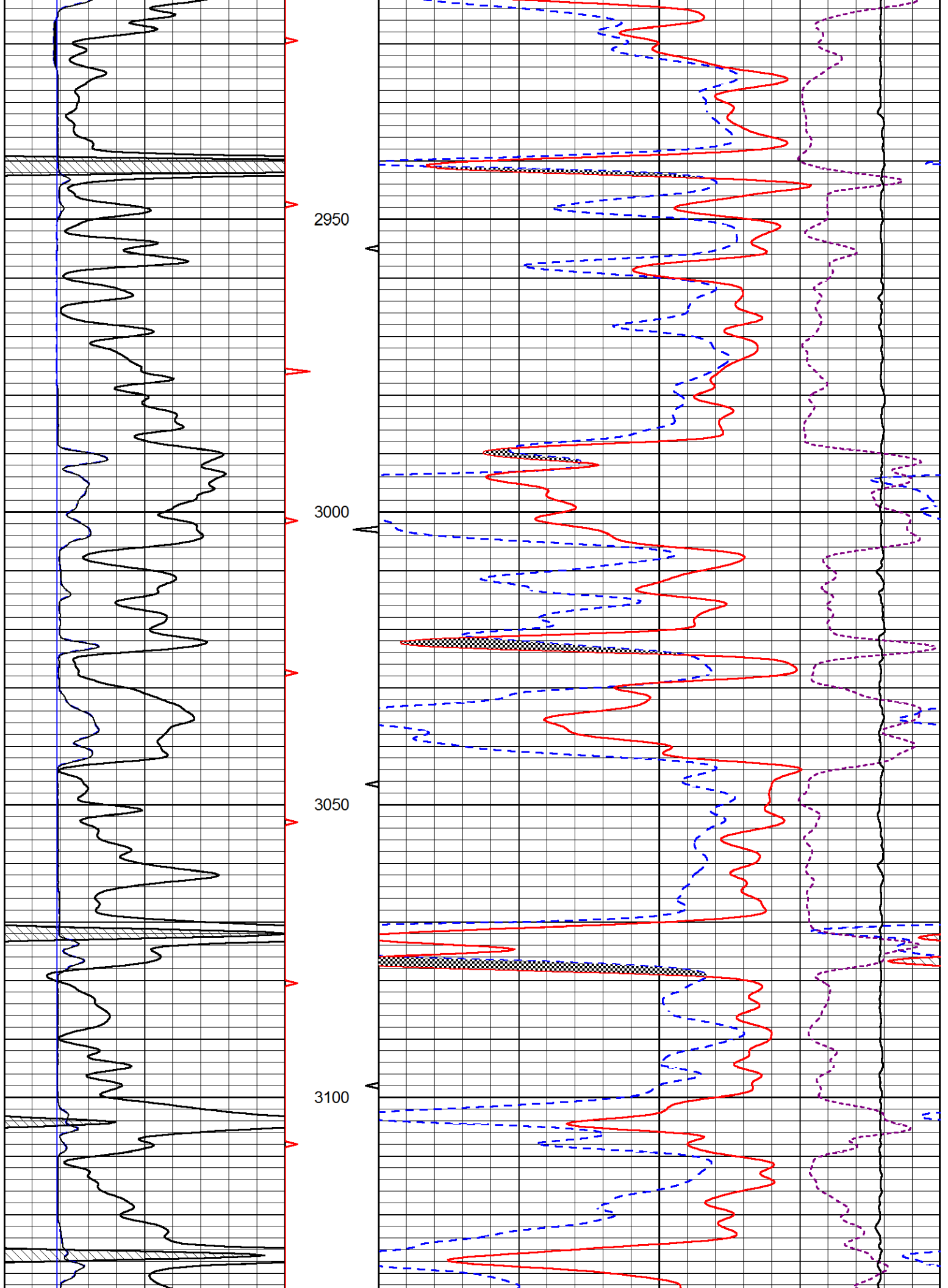
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 Dataset Pathname      STACK/pass4.1  
 Presentation Format      \_CNDLS~1  
 Dataset Creation      Wed Sep 30 09:56:53 2020  
 Charted by      Depth in Feet scaled 1:240

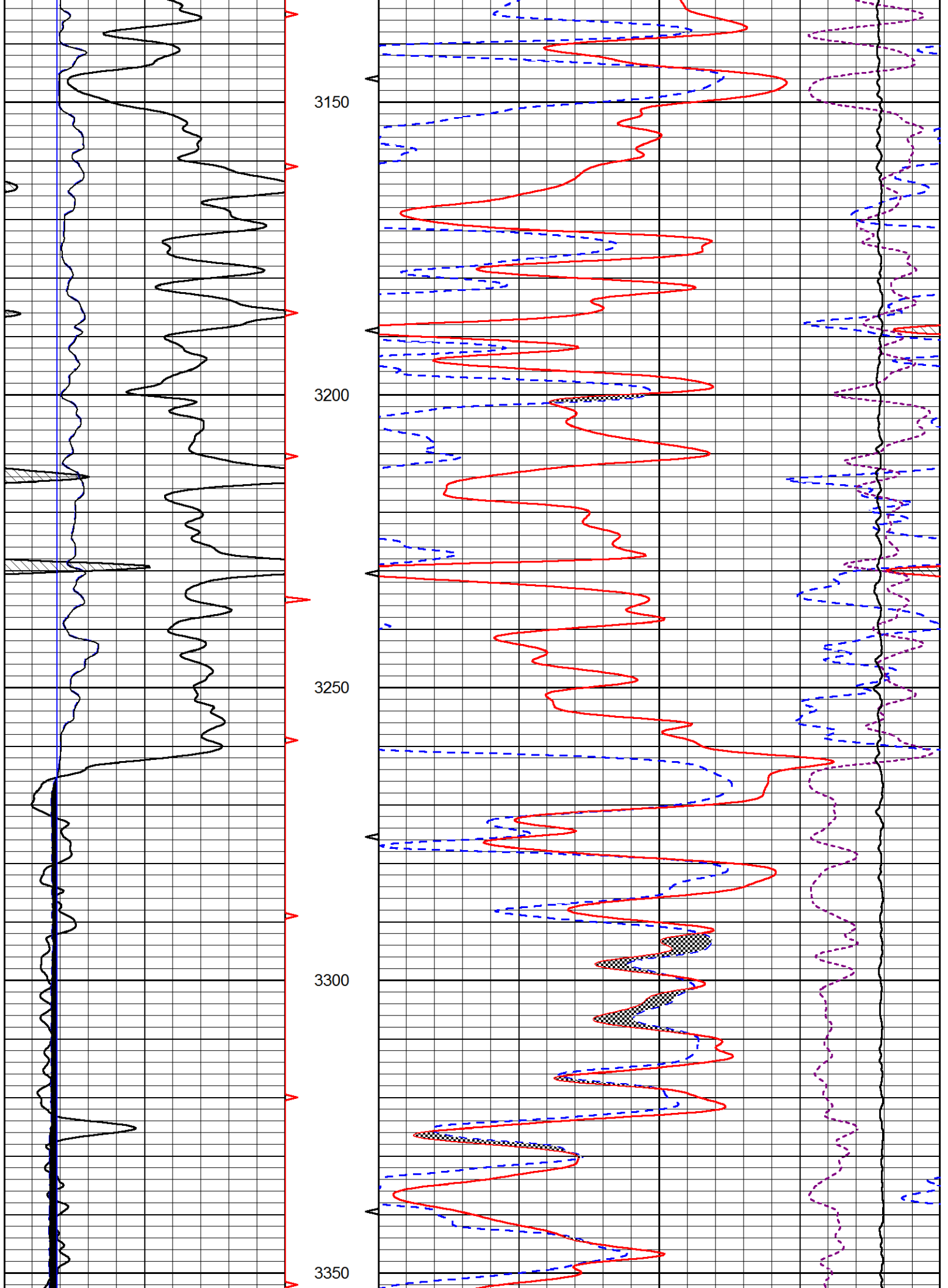
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6	DCAL (in)	16

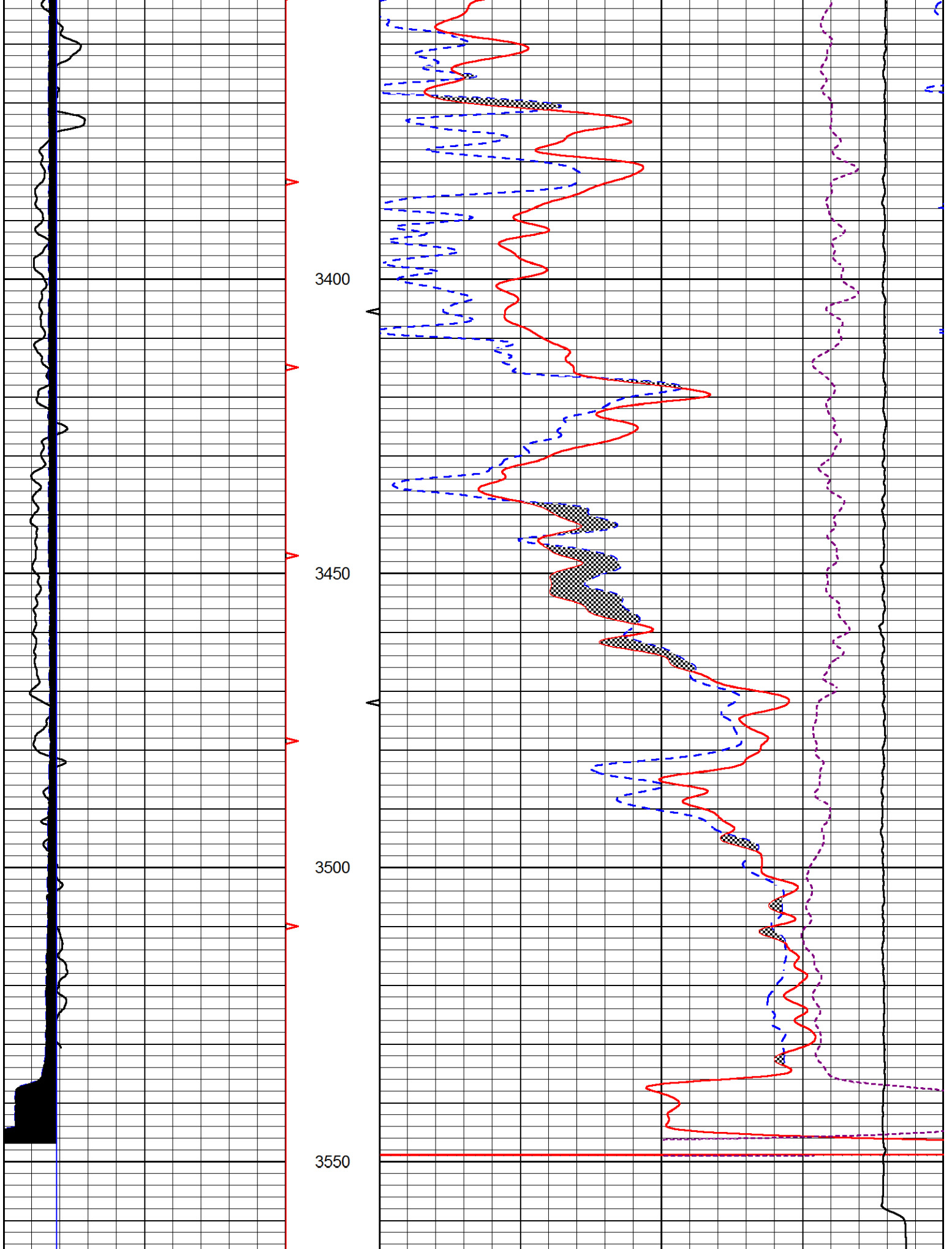
30	CNLS (pu)	-10
30	DPOR (pu)	-10
10000	LINE TENSION (lb)	0
	-0.25 CORRECTION (g/cc)	0.25











DCAL (in) 16

30	DPOR (pu)	-10
10000	LINE TENSION (lb)	0
	-0.25 CORRECTION (g/cc)	0.25

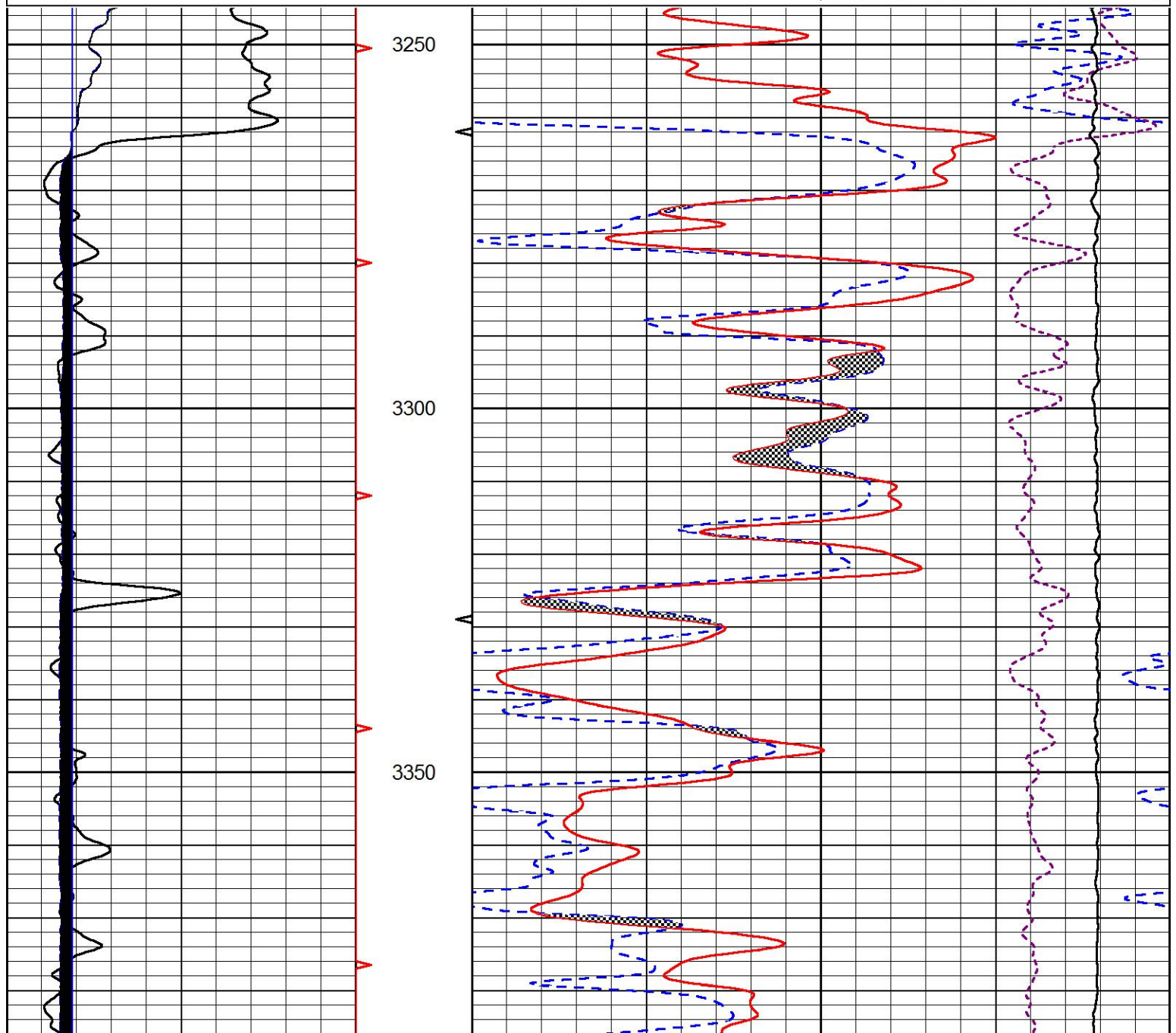


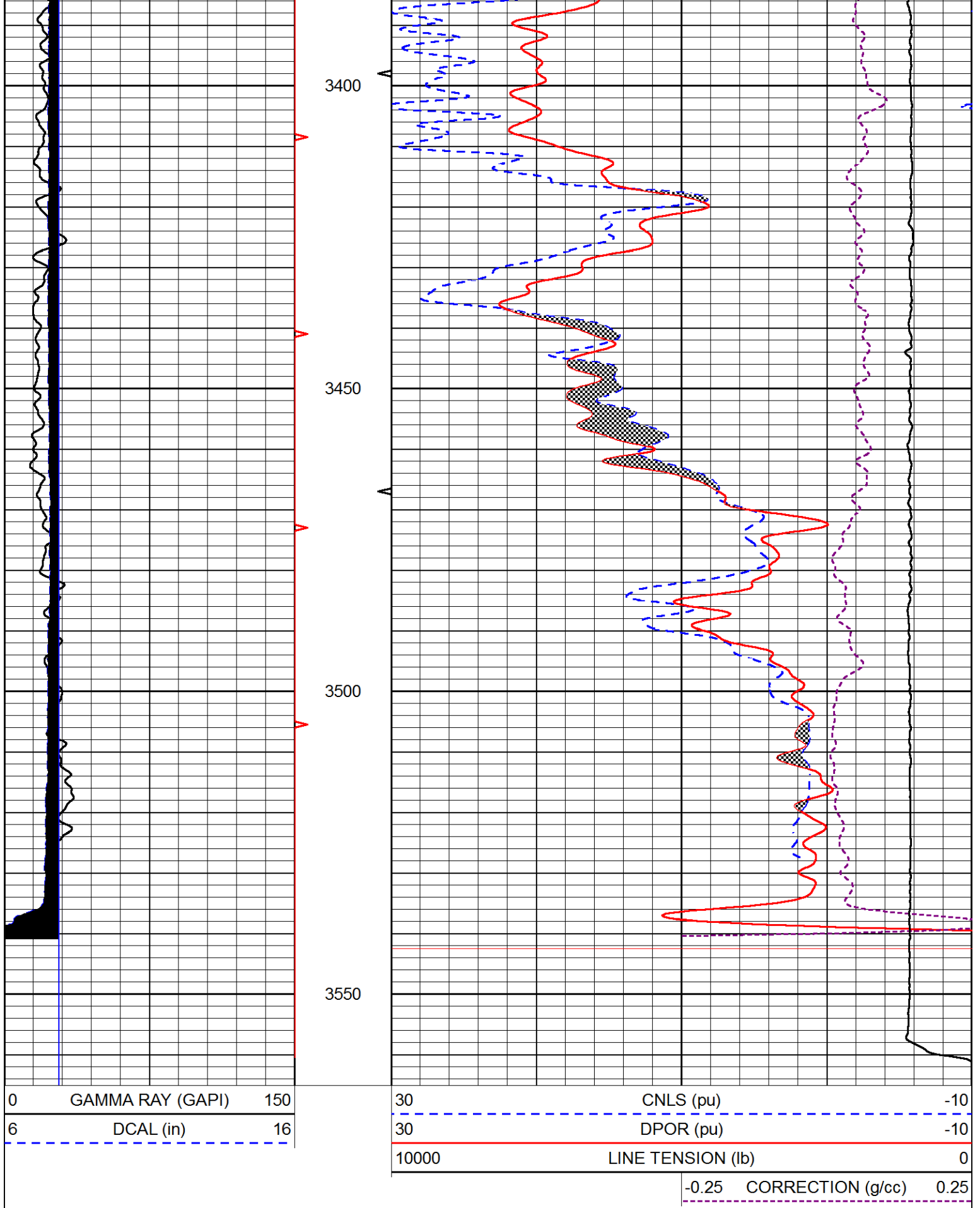
# REPEAT SECTION

Database File      howell\_dole 6.db  
 Dataset Pathname    STACK/pass3.1  
 Presentation Format    \_CNDLS~1  
 Dataset Creation      Wed Sep 30 09:53:01 2020  
 Charted by            Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
6	DCAL (in)	16

30	CNLS (pu)	-10
30	DPOR (pu)	-10
10000	LINE TENSION (lb)	0
	-0.25 CORRECTION (g/cc)	0.25





### Calibration Report

Database File      howell\_dole 6.db  
 Dataset Pathname    STACK/pass4.1  
 Dataset Creation    Wed Sep 30 09:56:53 2020

### Dual Induction Calibration Report

Serial-Model: 952-828-PSI HIGH TEMP  
 Calibration Performed: Sun Jun 28 08:39:24 2020

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.000	mmho/m	0.465	-35.000
Medium	0.000	1348.000	142.000	255.000	mmho/m	0.335	-35.500

### Compensated Density Calibration Report

Serial-Model: 126-4040-M&W  
 Source / Verifier: 16955B / 2ci  
 Master Calibration Performed: Mon May 04 13:53:02 2020

#### Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4596.93	6658.73	cps
Aluminum	2.688	g/cc	866.71	4213.06	cps
Spine Angle = 74.66			Density/Spine Ratio = 0.539		
	Size		Reading		
Small Ring	6.00	in	0.53		
Large Ring	14.00	in	0.60		

### Compensated Neutron Calibration Report

Serial Number: 207-MW  
 Tool Model: M&W  
 Calibration Performed: WED FEB 13 10:30:30 2019

Detector	Readings	Target	Normalization
Short Space	6240.00 cps	1000.00 cps	1.6025
Long Space	460.00 cps	1000.00 cps	1.9500

### Gamma Ray Calibration Report

Serial Number: 89  
 Tool Model: M&W  
 Calibration Performed: Fri Aug 24 11:16:10 2018

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 1.0 cps

Sensitivity: 0.6000 GAPI/cps