



Pioneer Energy Services

GAMMA RAY / CALIPER
LOG

Company **MURFIN DRILLING, INC.**

Well RED POLL #10-21

Field WILDCAT

County LINCOLN State COLORADO

Location: API #: 05-073-06720

SEC 21 TWP 10S RGE 56W

Permanent Datum	GROUND LEVEL	Elevation	5492
Log Measured From	KELLY BUSHING		
Drilling Measured From	KELLY BUSHING		

	Elevation
K.B.	5505'
D.F.	N/A
G.L.	5492'

Date	9/1/2017
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Run Number	ONE
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Type Log	BHV
...	...

Depth Logger	8499'
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Bottom Logged Interval	84/0'
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Top Logged Interval	4000
Times Elapsed	CINEMA

Salinity, PPM CL	500
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Density	9.3
	11.1

Level	100%
Max Pass Tonnage	N/A

Operating Bin Time	7 HOURS
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Equipment -- Location	91	CC
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Recorded By	D. SCHMIDT
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Witnessed By	WES HANS
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Run No.	Bit	From	To
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ONE	12.25"	0'	476'
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8.025	1.8/3	4/6	1D
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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer 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.

LIMON, COLORADO,
SOUTH ON HWY 71 TO 22Z RD, 1 EAST, 1/2 SOUTH,
EAST INTO

NO REPEAT DUE TO HOLE CONDITIONS

Log Measured From: KELLY BUSHING 13 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneerenergy.com 785-625-3858

Your Pioneer Energy Services Crew


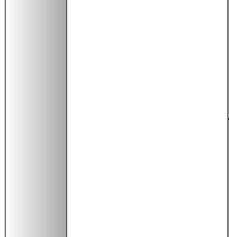
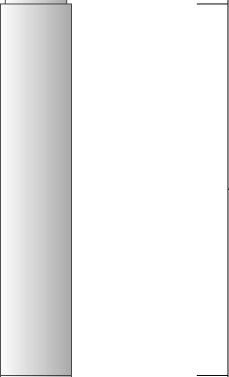
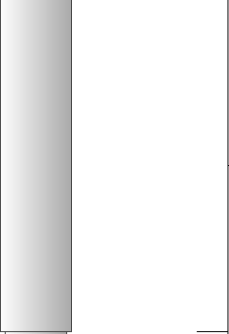
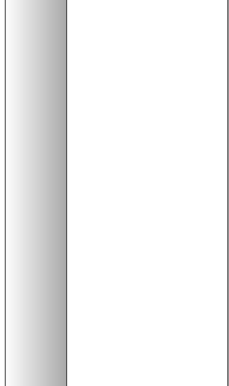
Engineer: D. SCHMIDT
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

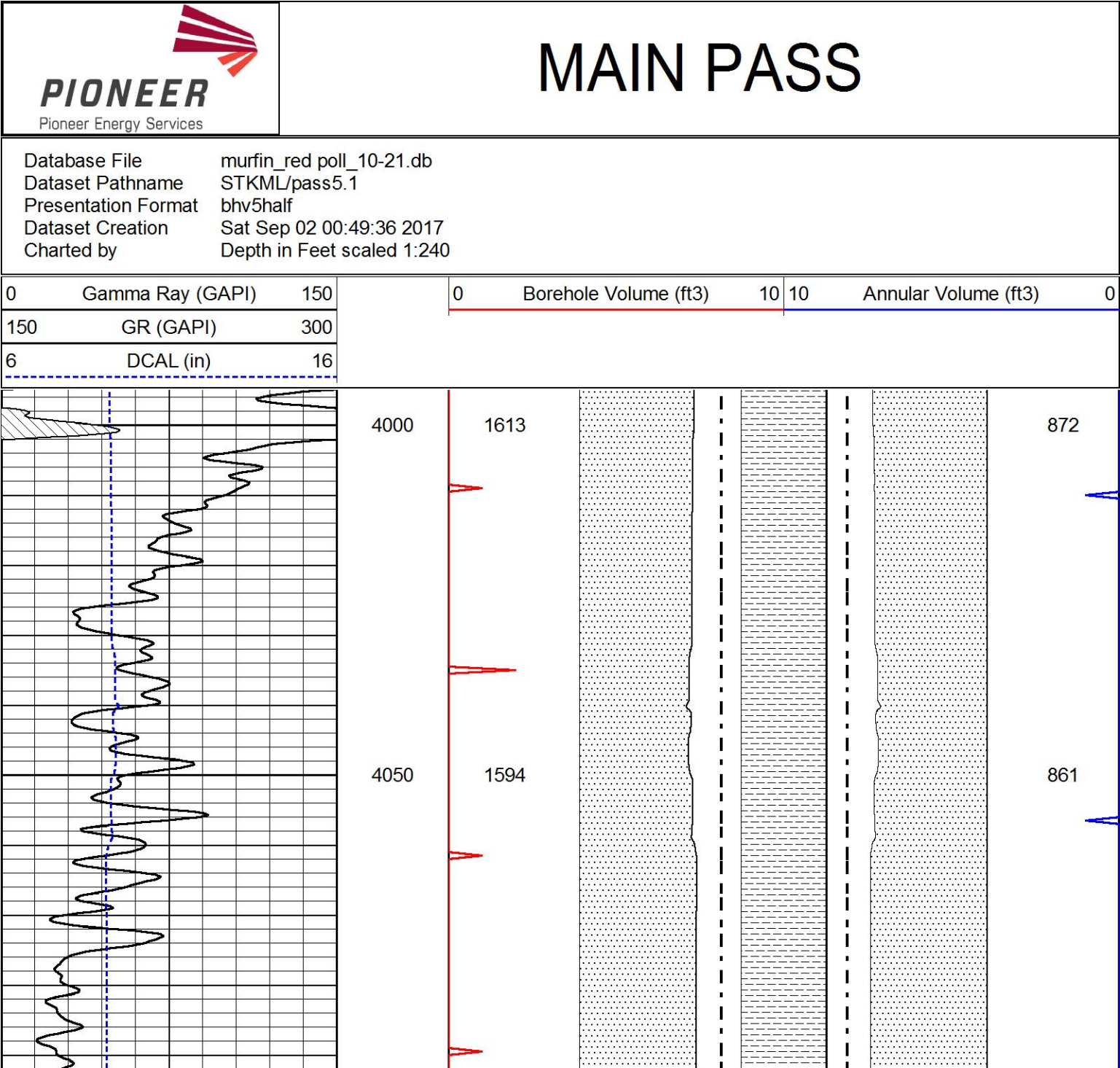
Primary Witness: WES HANSEN
Secondary Witness:
Secondary Witness:
Secondary Witness:

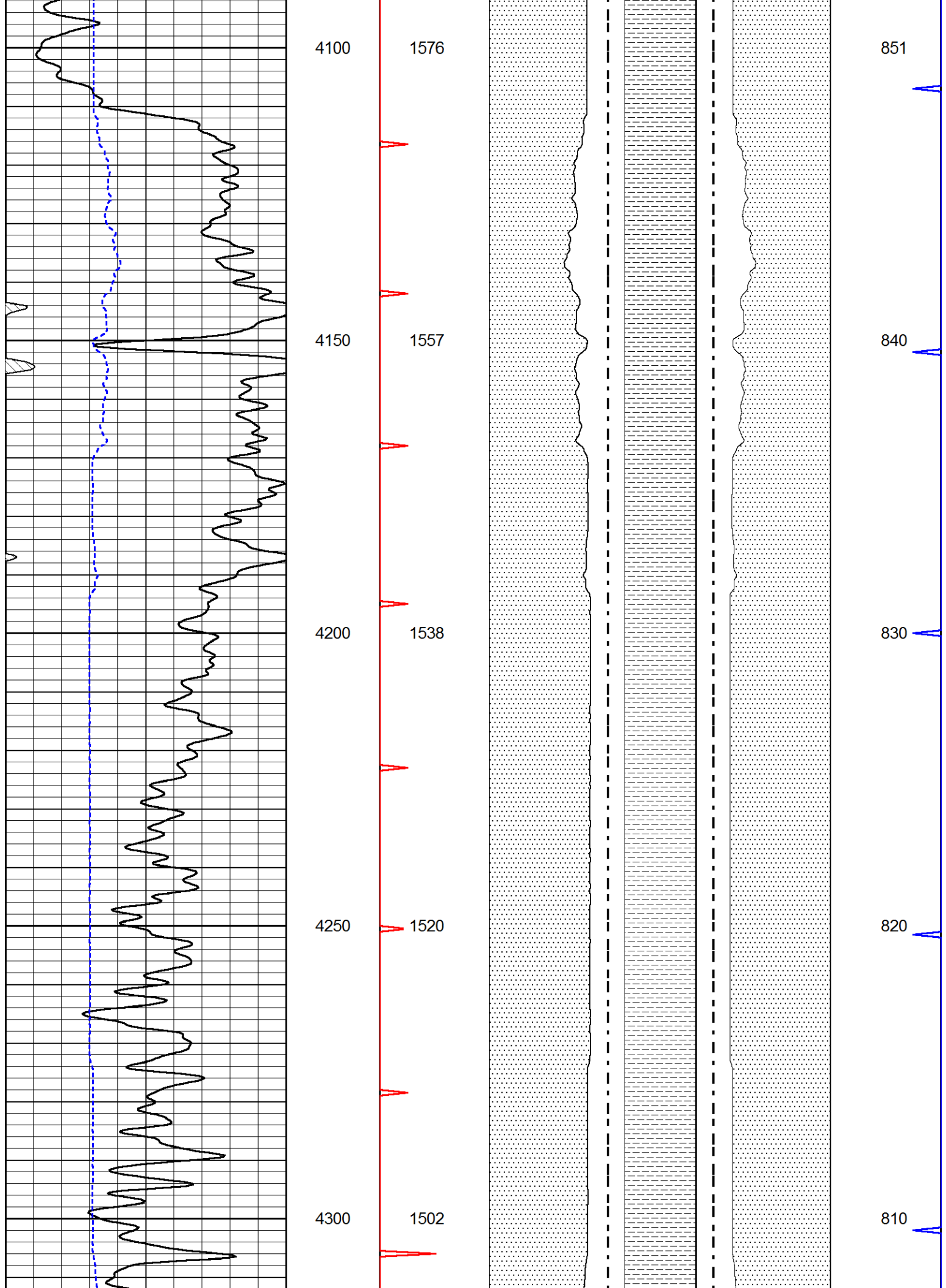
Top - Bottom

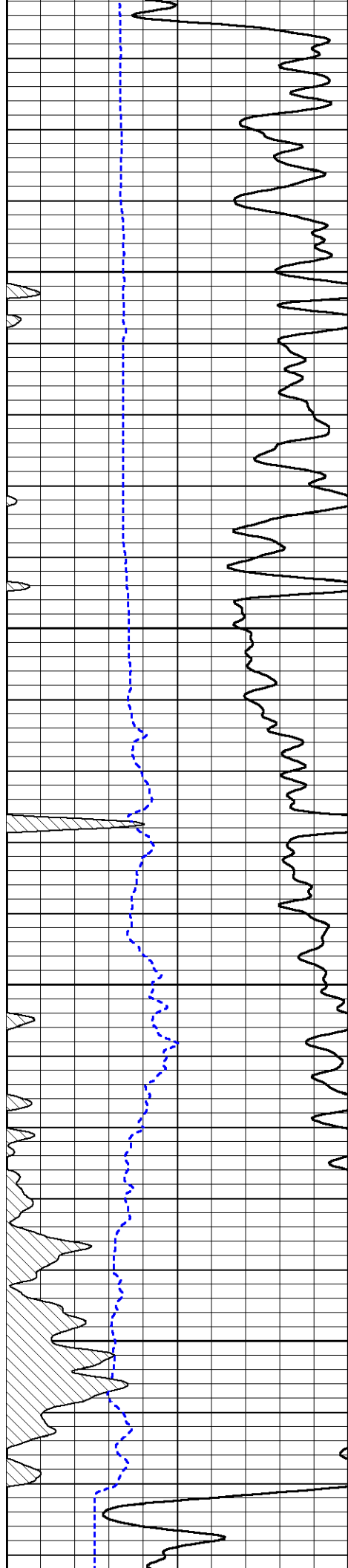
M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	0	0
SNDERR mmho/m 0	SRFTEMP degF 80	CASETHCK in 0	CASEOD in 5.5	PERFS 0	TDEPTH ft 8499	BOTTEMP degF 100	BOREID in 7.875

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (207-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (90-1031)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSIML (PSI-01) GO Micro log tools converted to Simplec electronics	7.58	4.00	65.00
RLL3F RLL3	15.80 15.80					

CILD	8.00		DIL-M&W (PSI 91)	18.50	3.50	220.00
CILM	4.70					
SP	0.20					
Dataset: murfin_red poll_10-21.db: field/well/STKML/pass5.8 Total length: 43.08 ft Total weight: 685.00 lb O.D.: 4.00 in						







4350

4400

4450

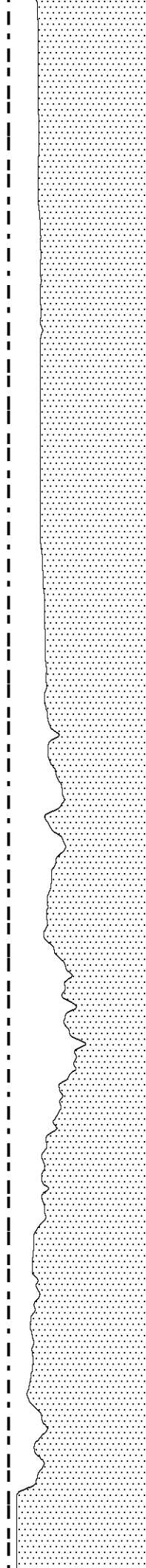
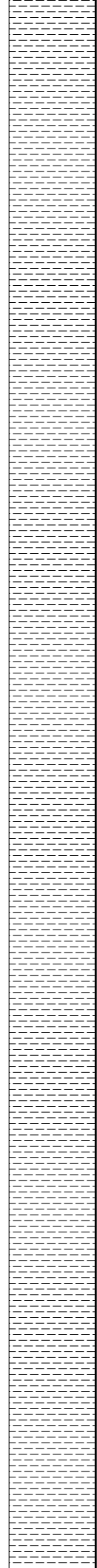
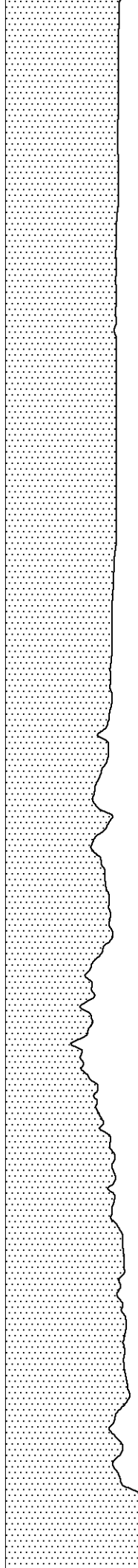
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1484

1465

1445

1424



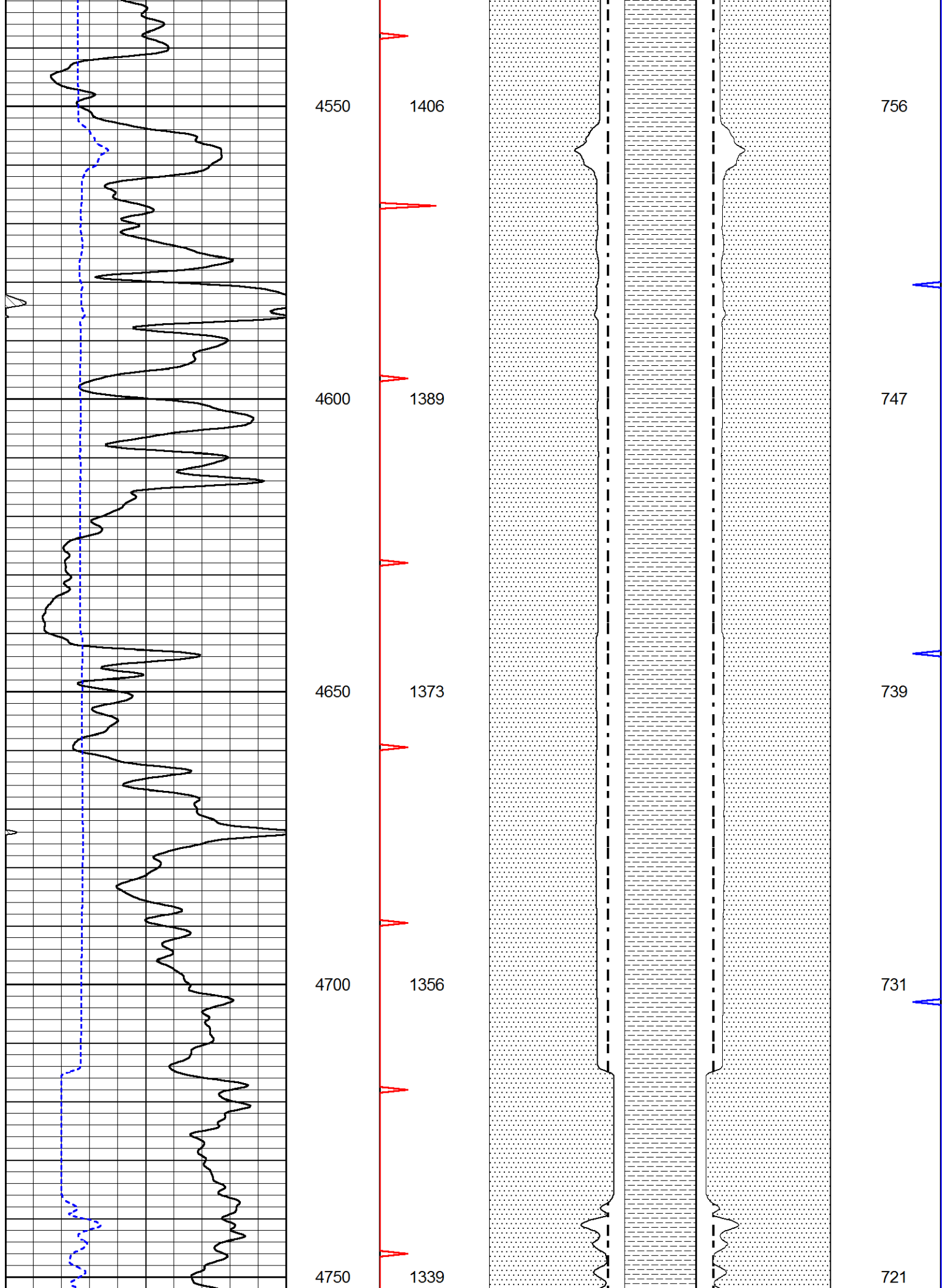
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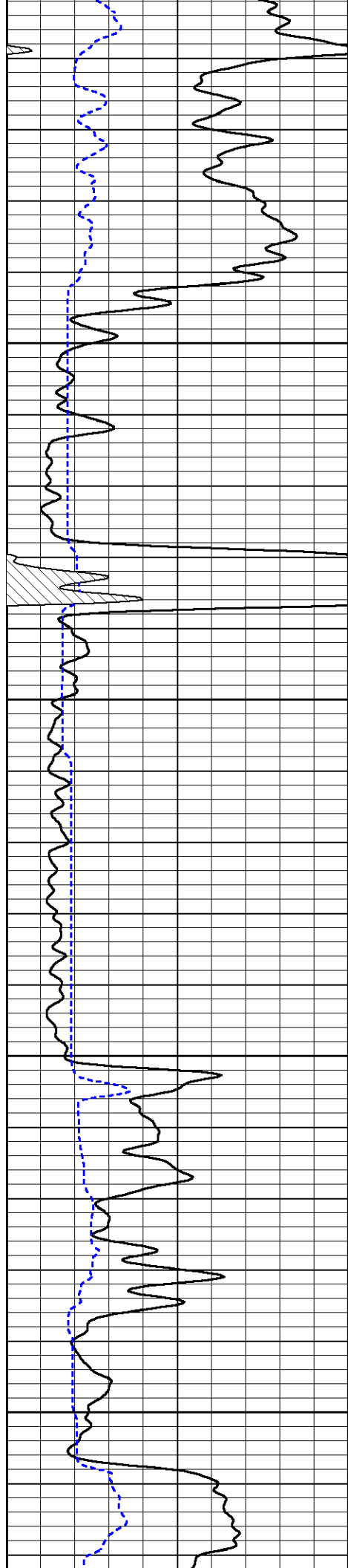
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778

765





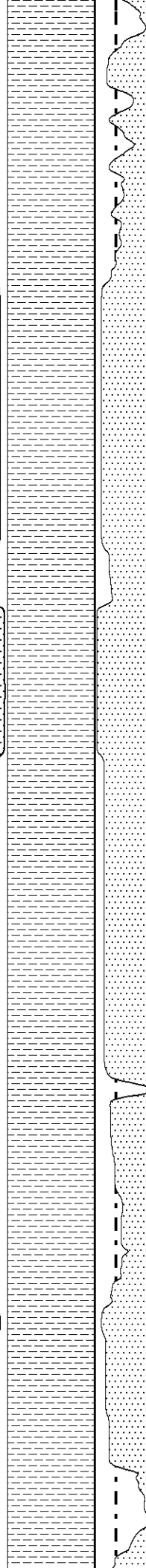
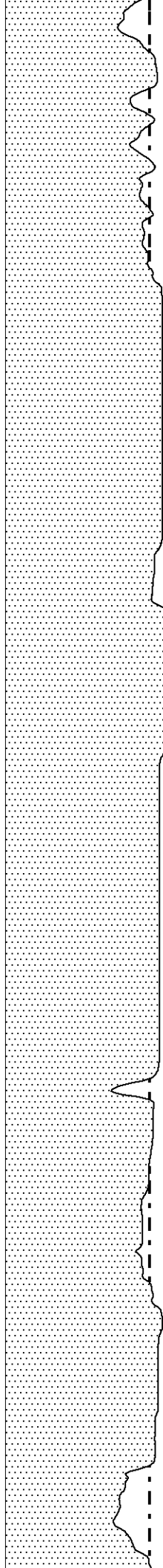


4800 1321

4850 1304

4900 1289

4950 1271

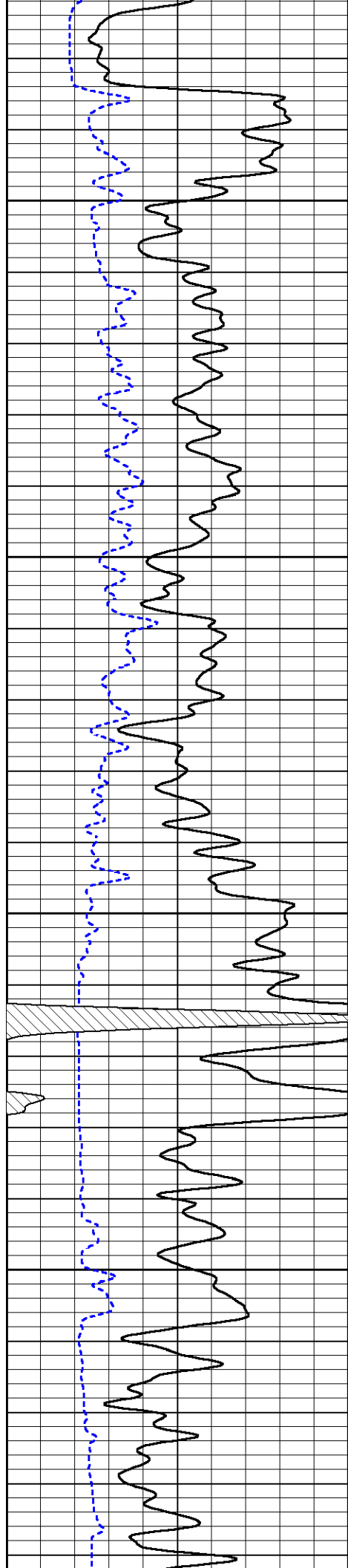


712

703

696

686



5000

1253

5050

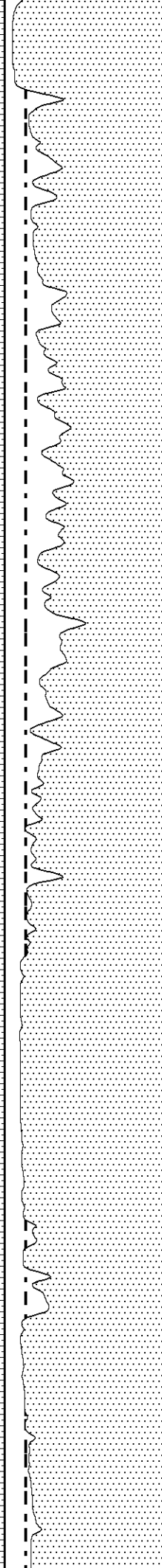
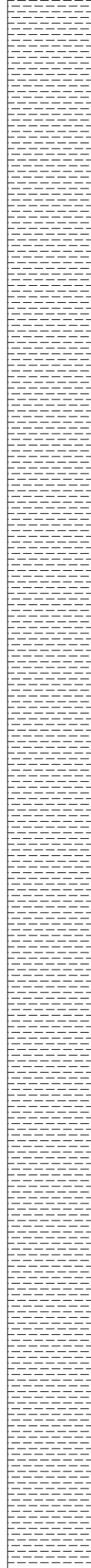
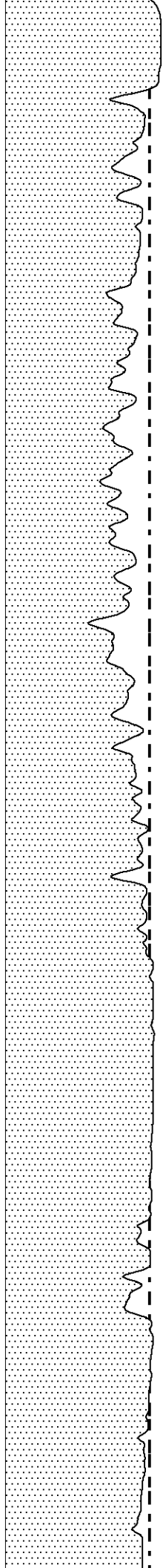
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5100

1214

5150

1196

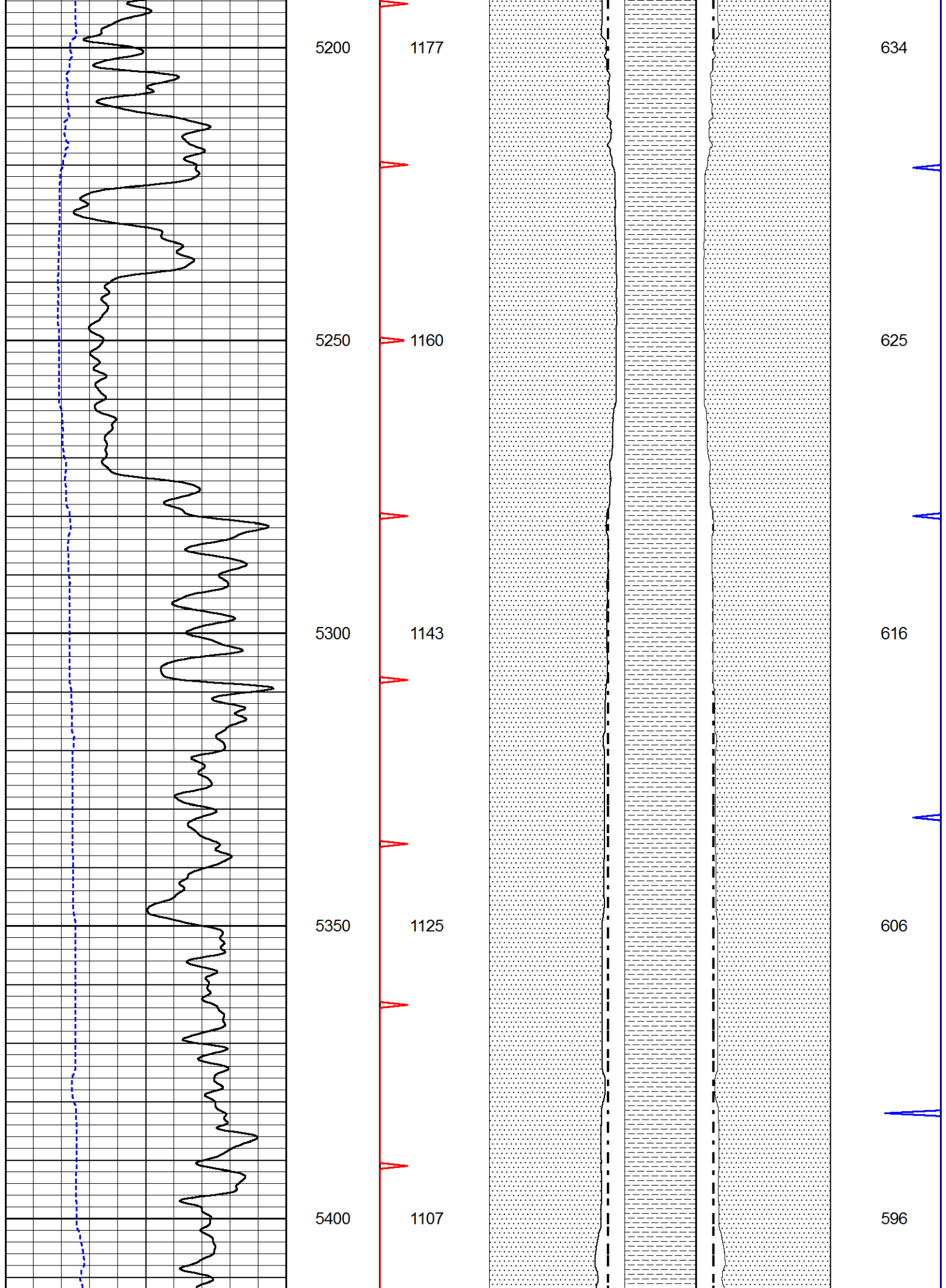


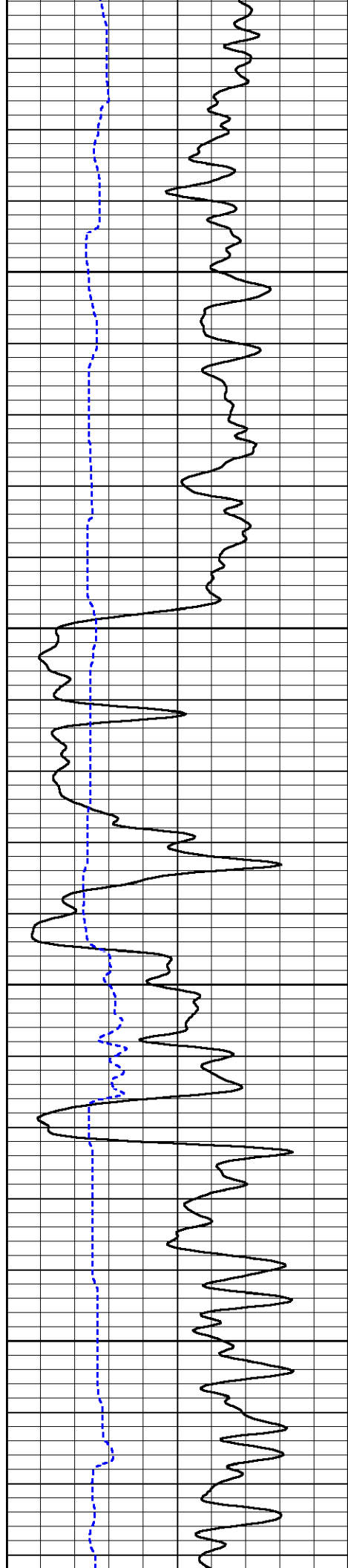
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665

654

644





5450

1088

5500

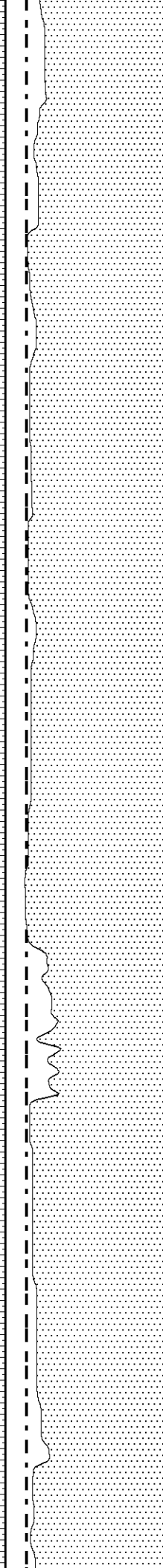
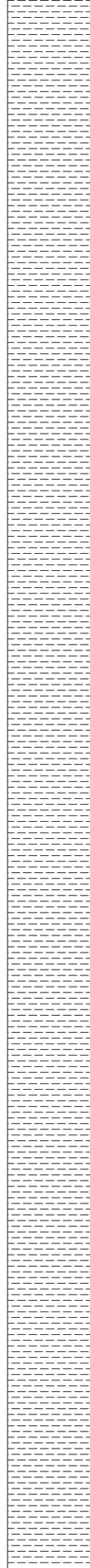
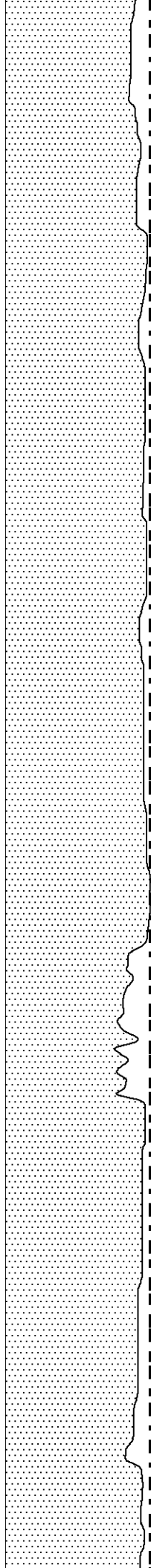
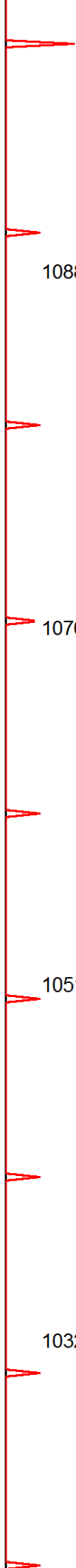
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5550

1051

5600

1032



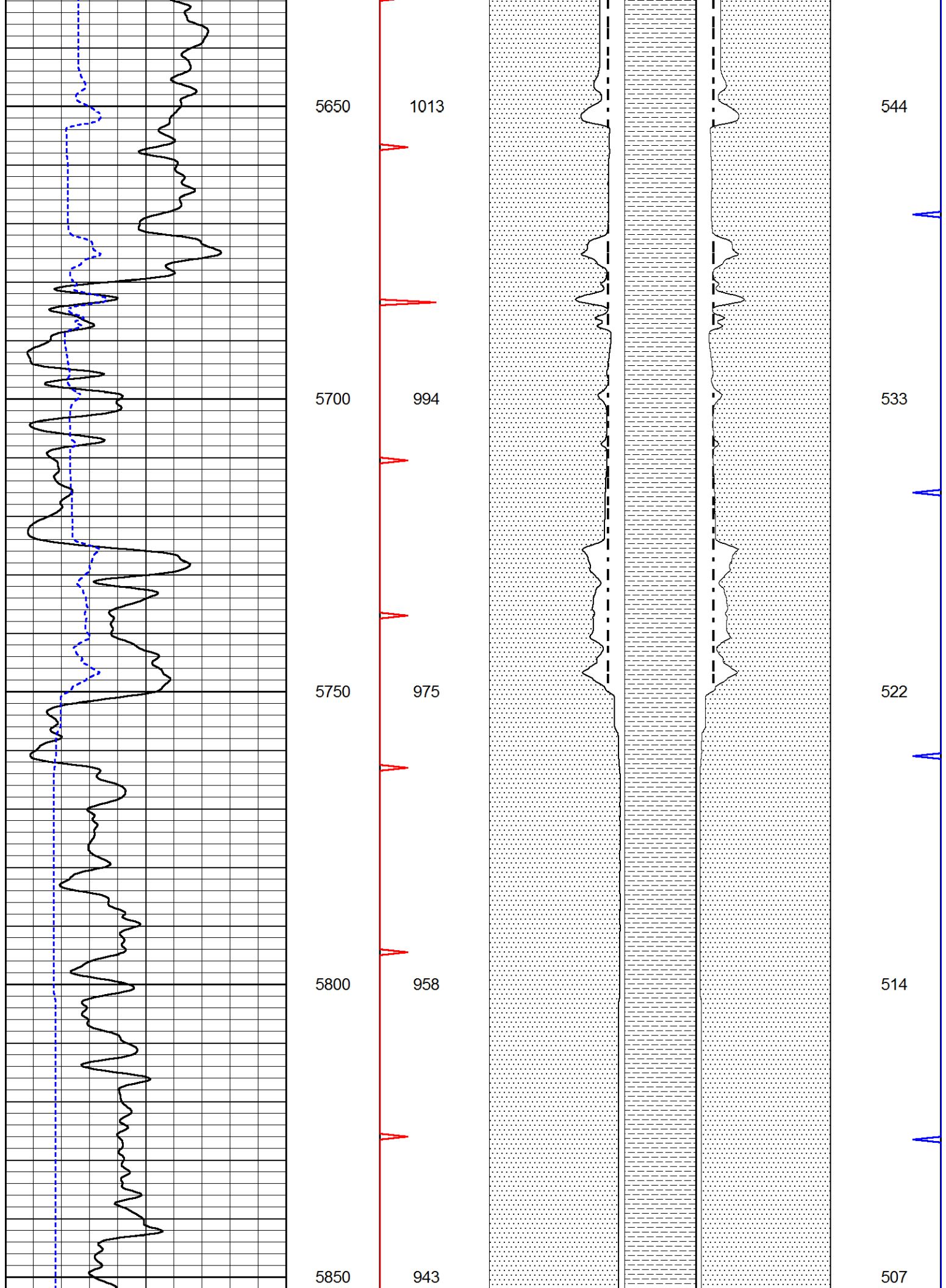
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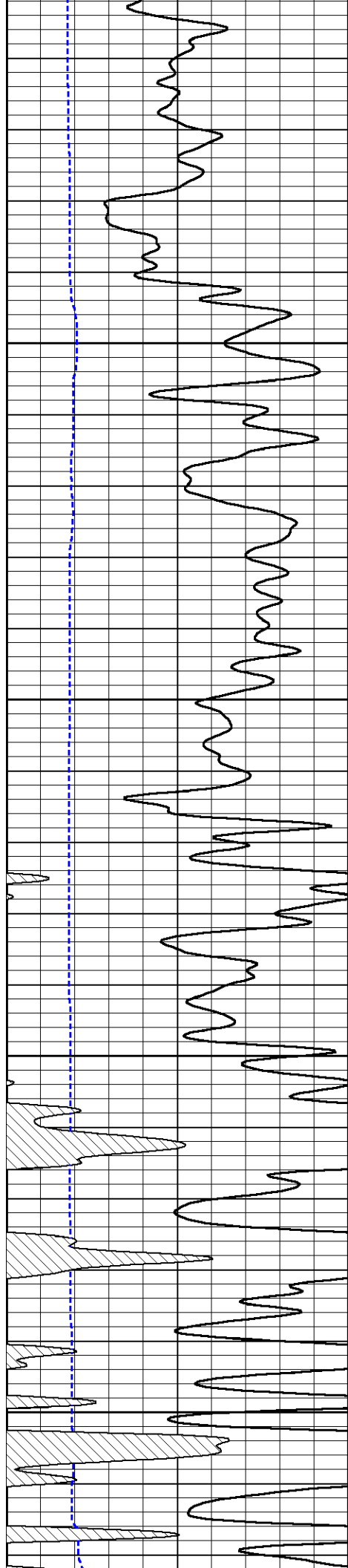
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566

554







5900

927

5950

910

6000

893

6050

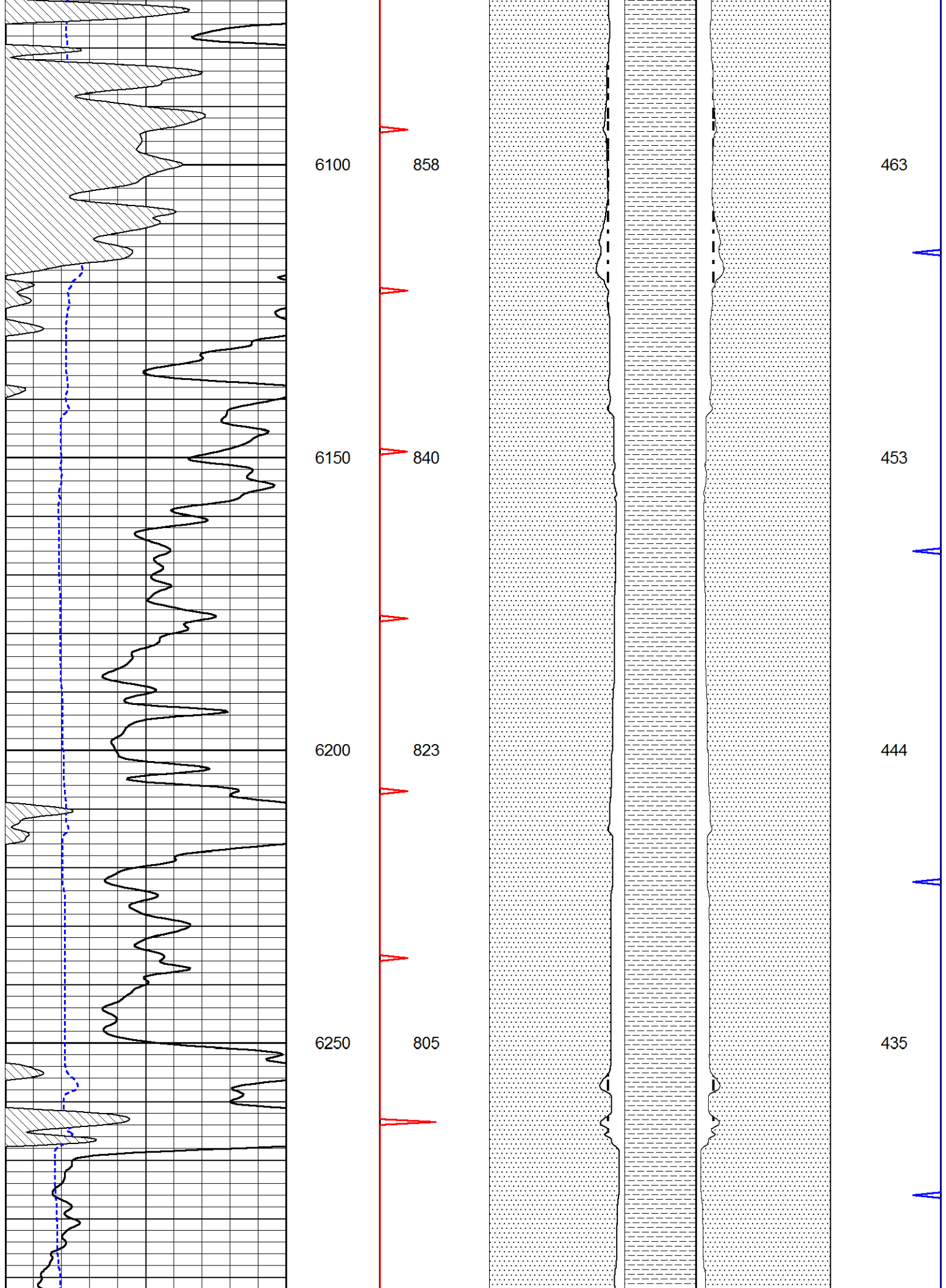
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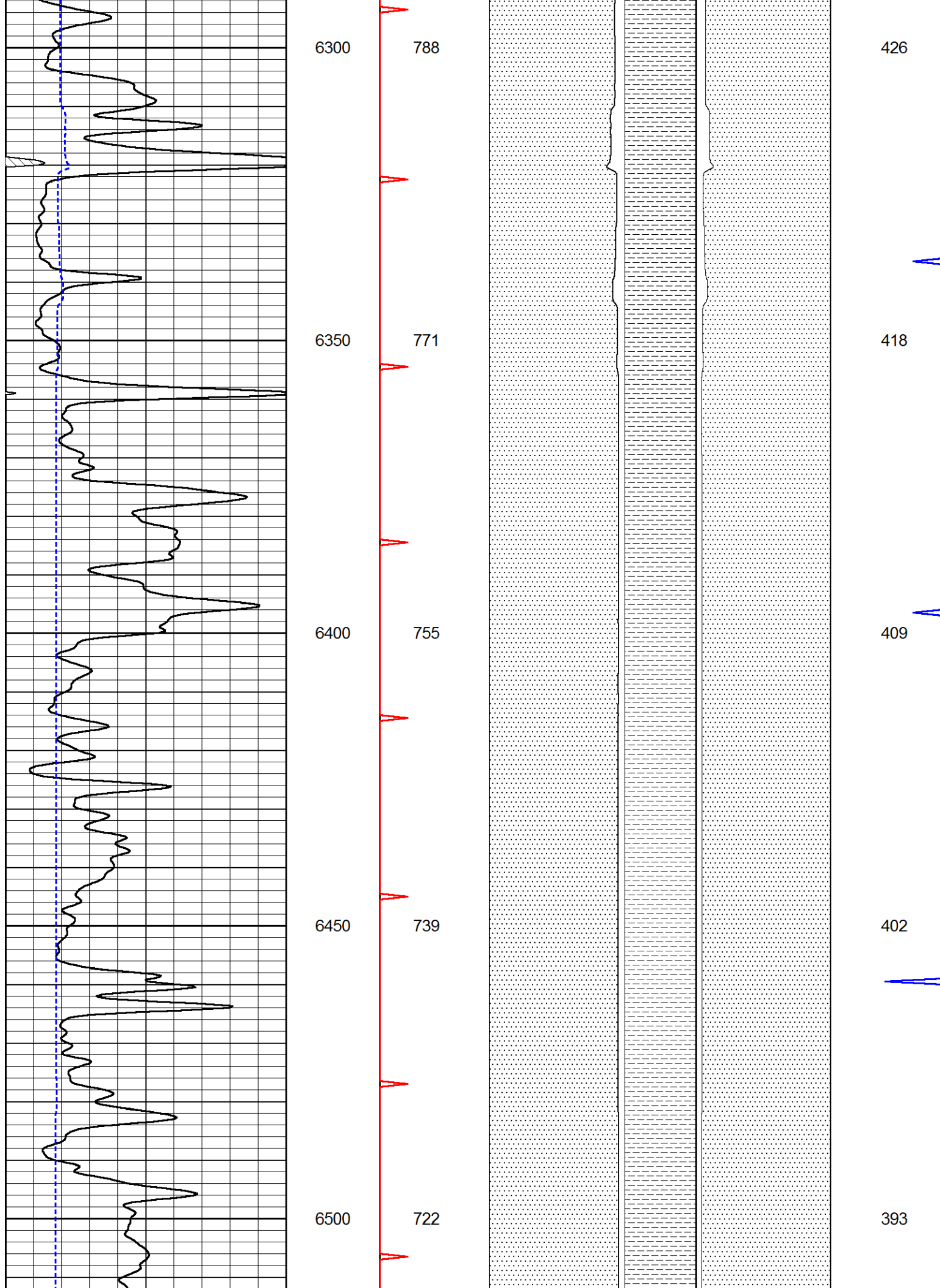
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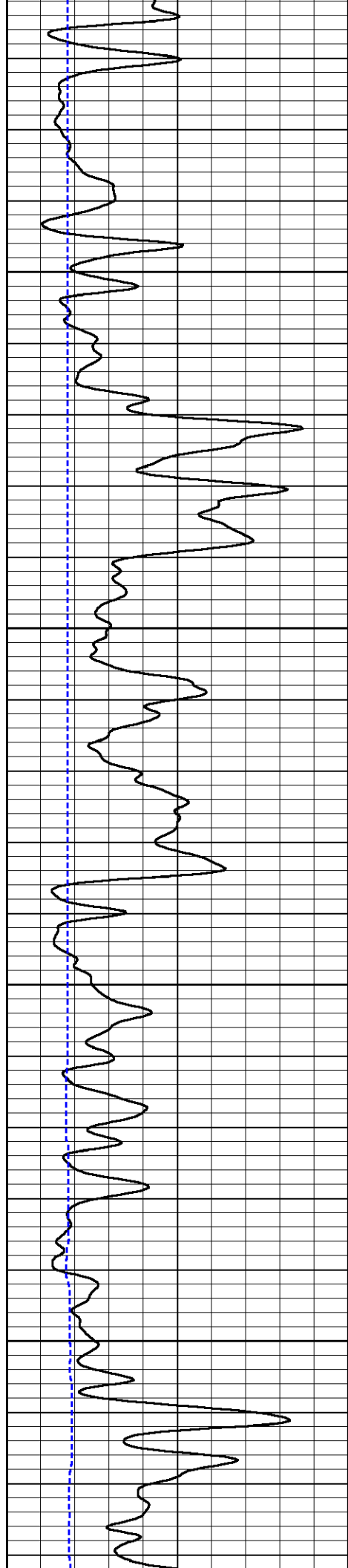
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481

472







6550

705

6600

688

6650

672

6700

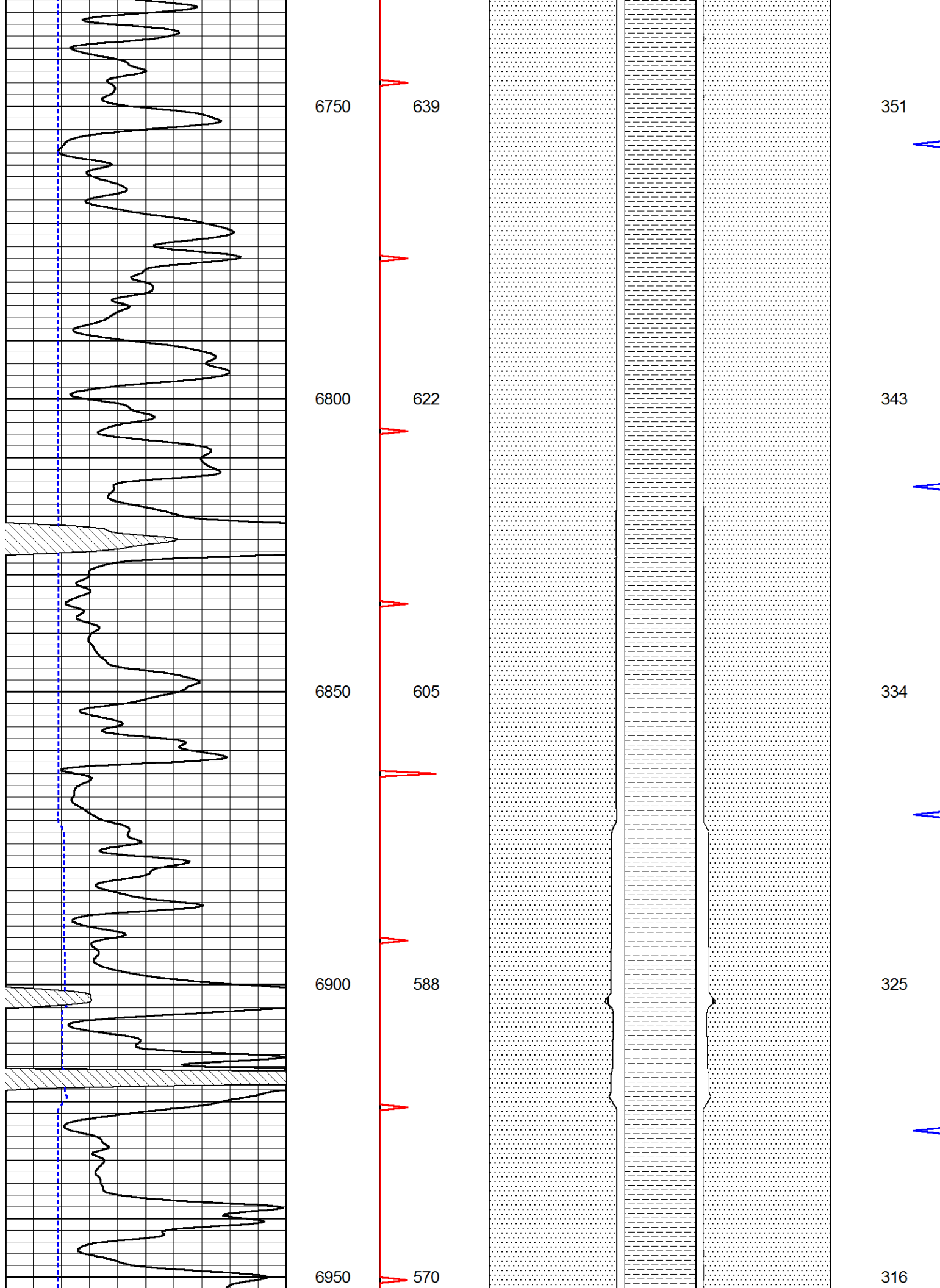
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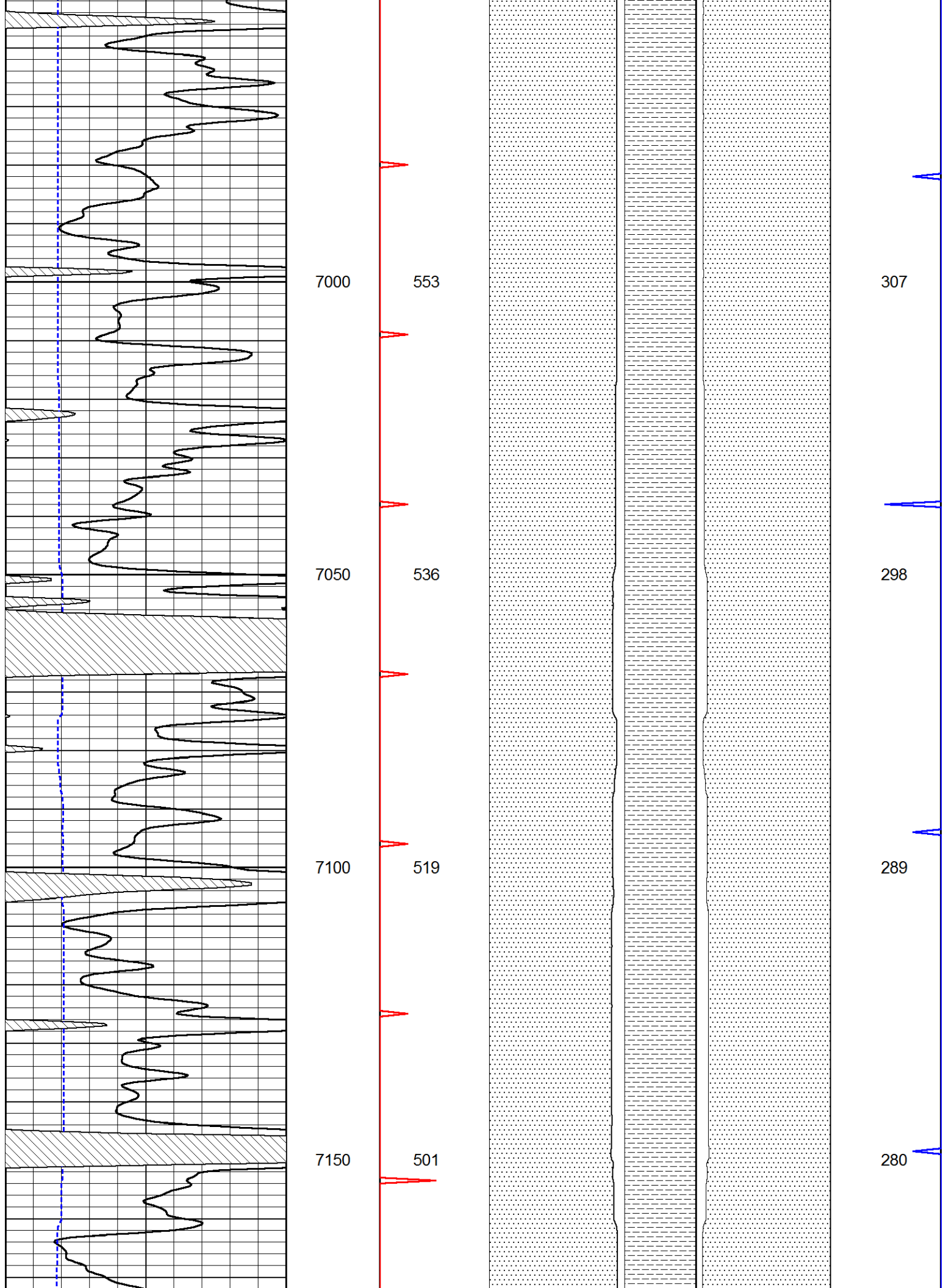
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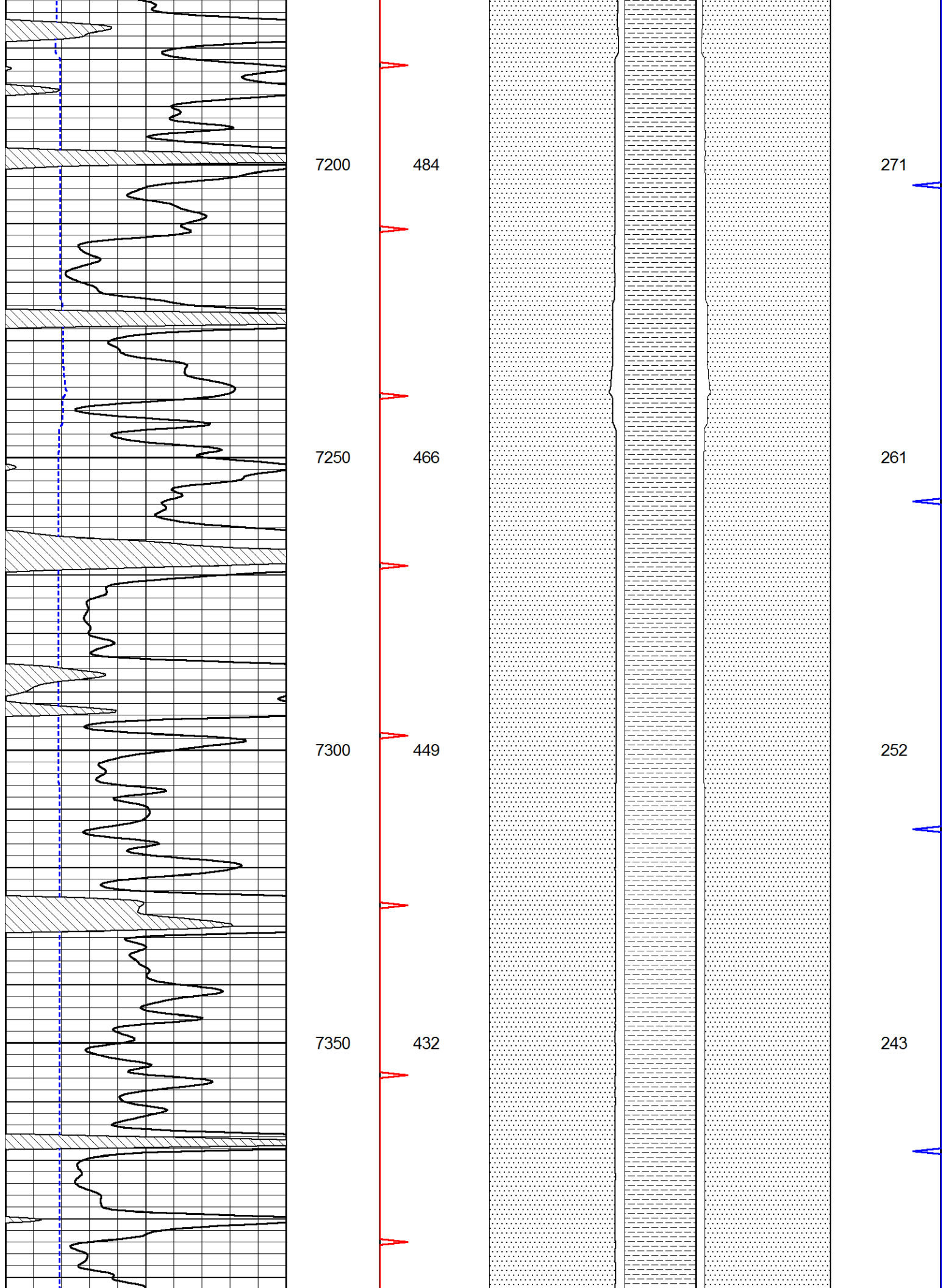
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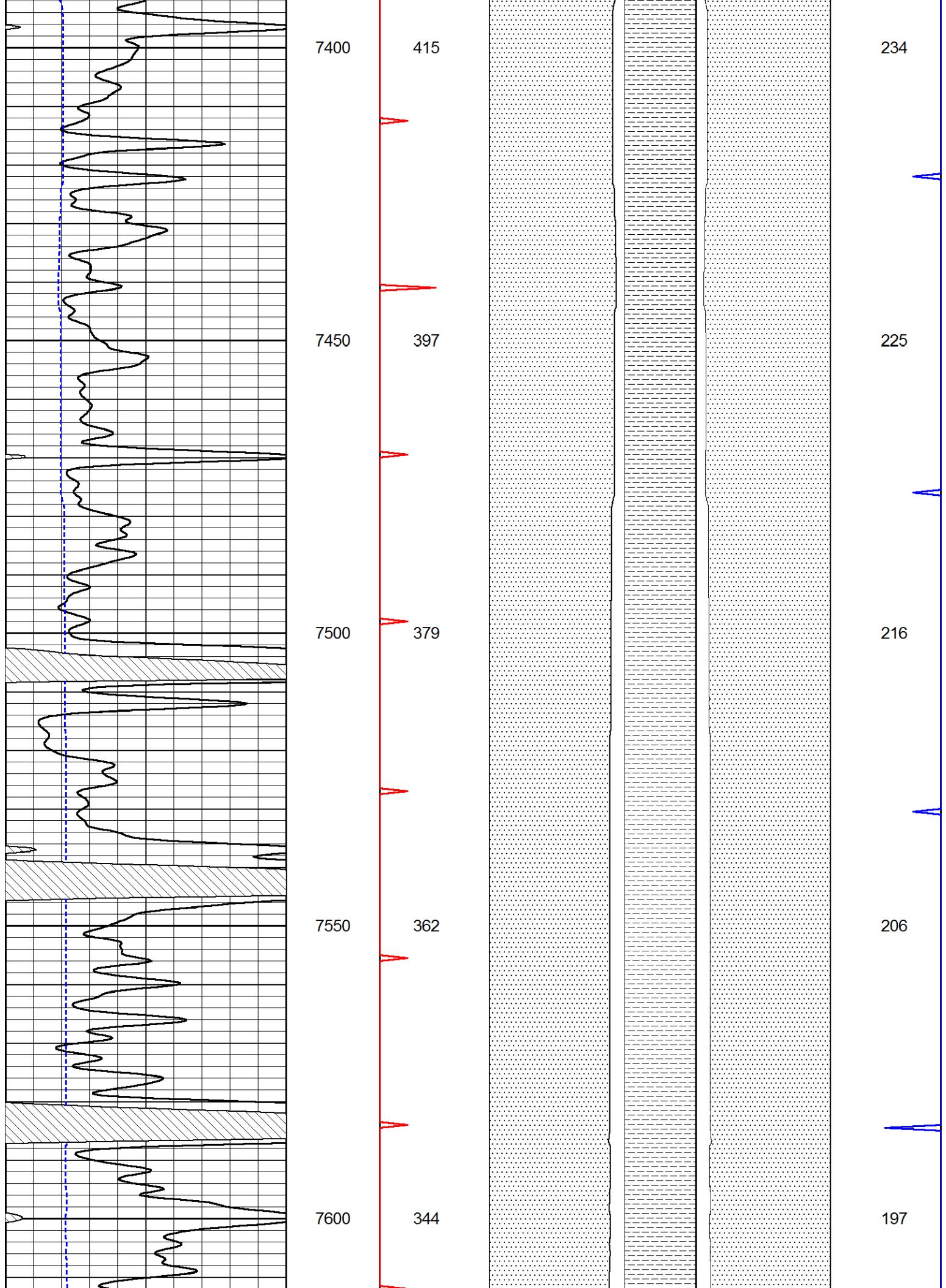
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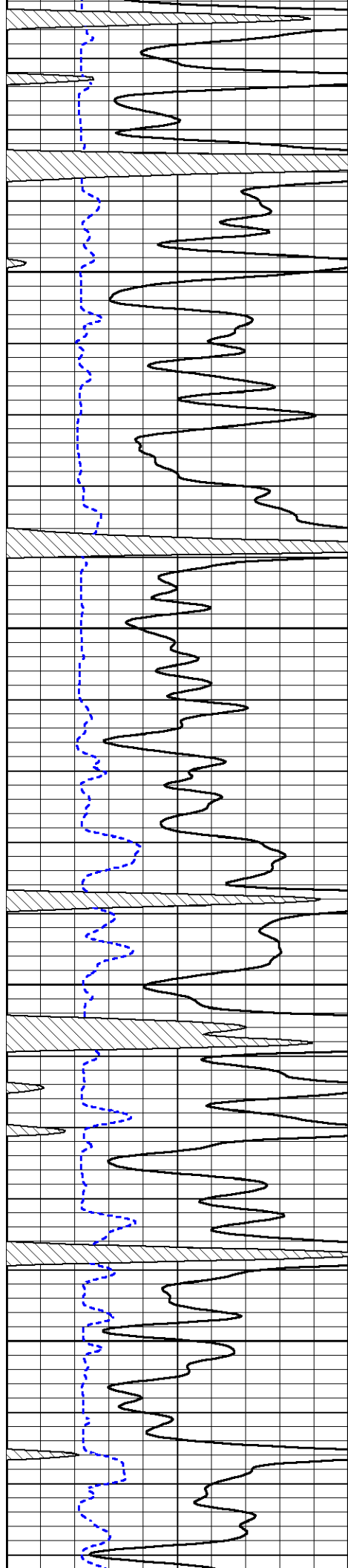
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7650

326

7700

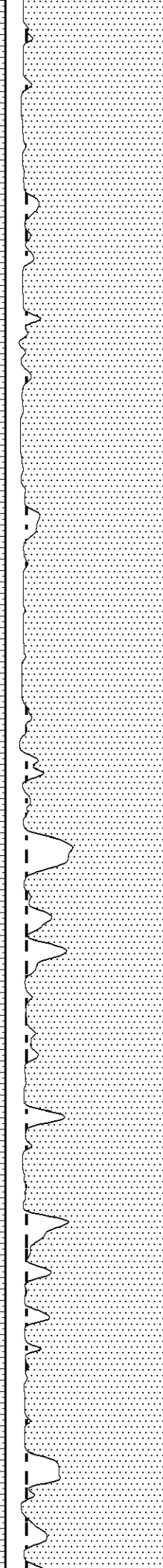
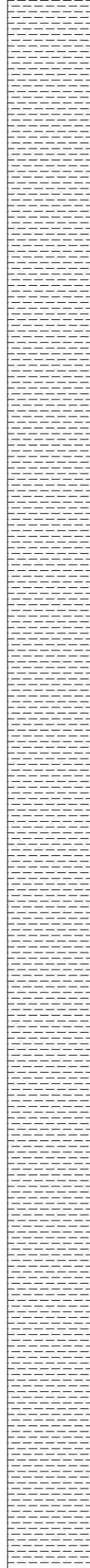
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7750

289

7800

270



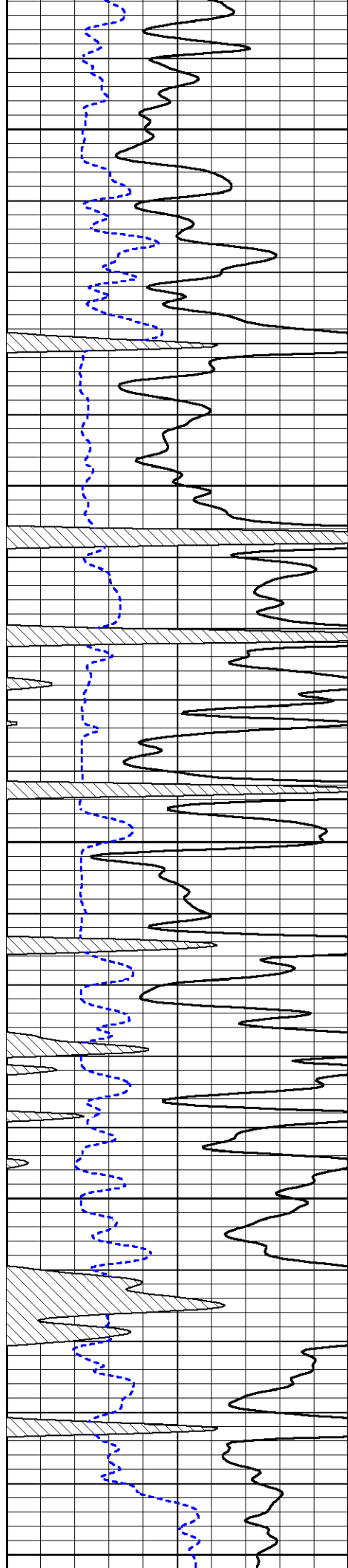
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177

166

156





7850

250

7900

229

7950

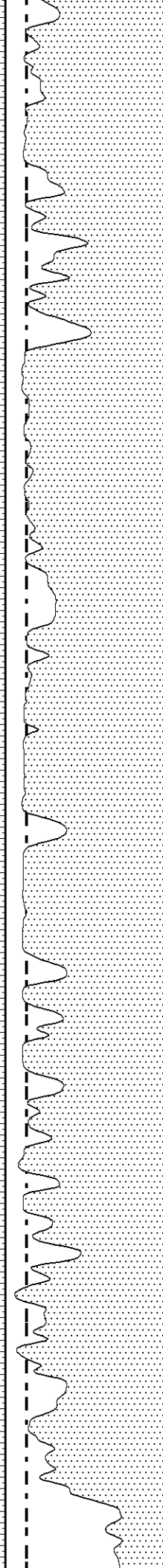
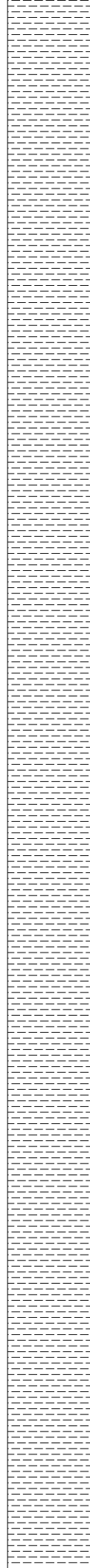
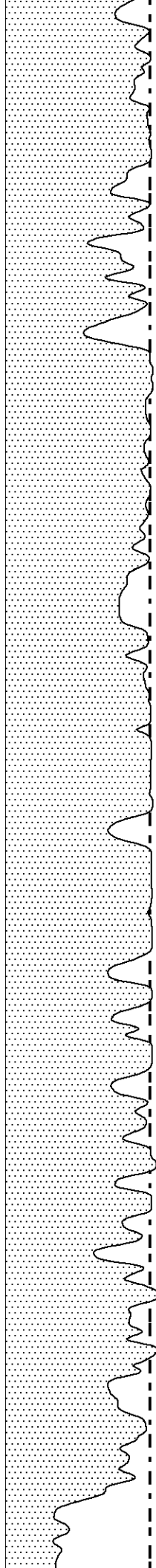
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8000

191

8050

168



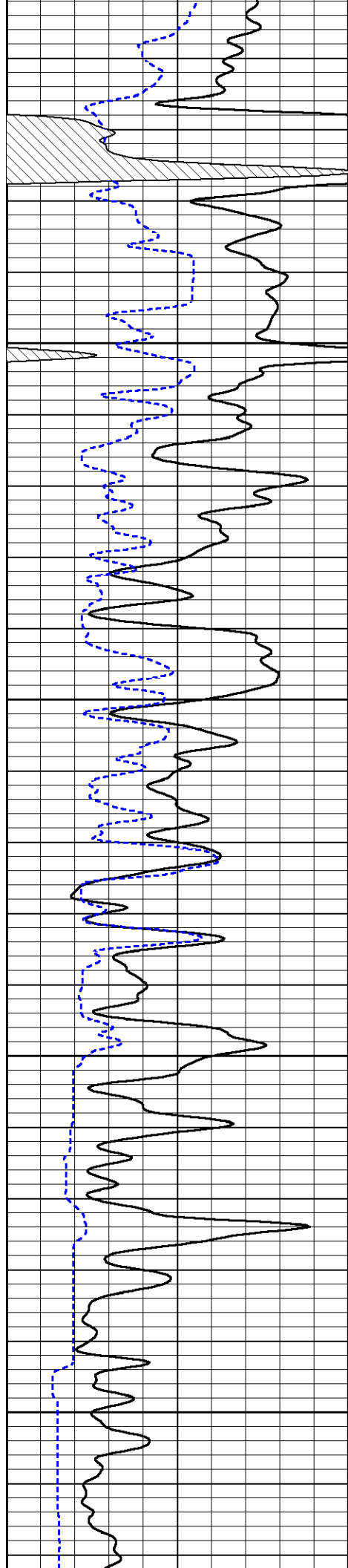
144

132

120

109

95



8100

143

8150

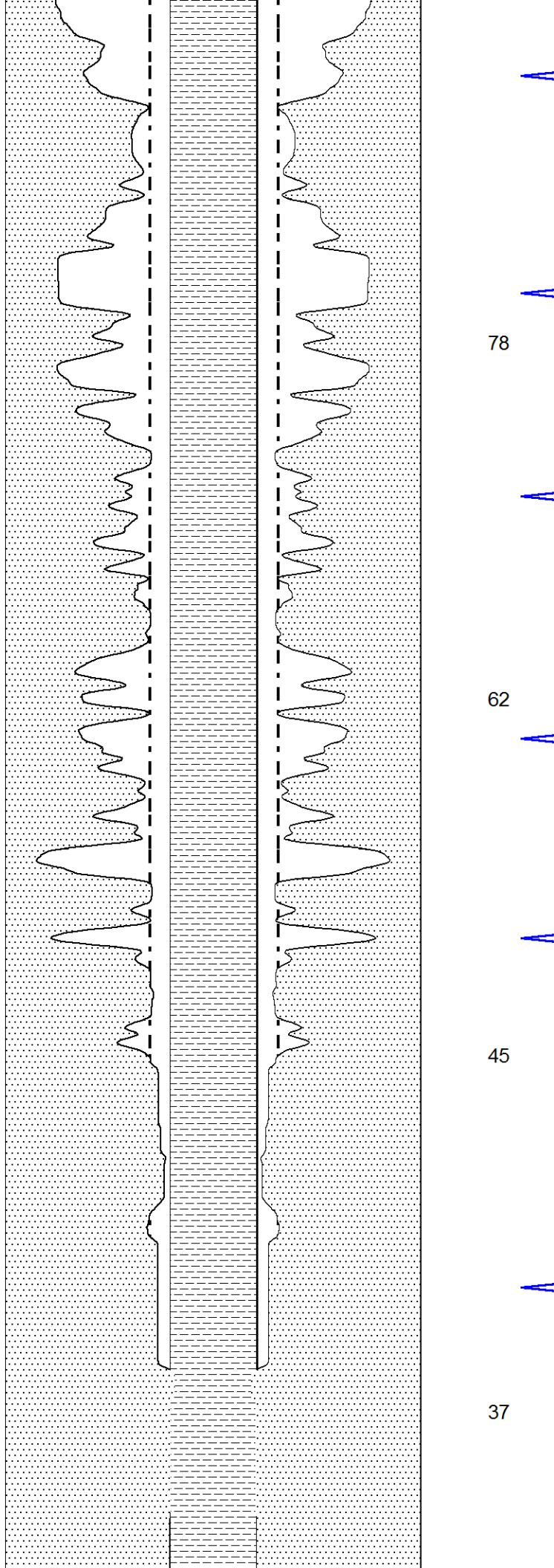
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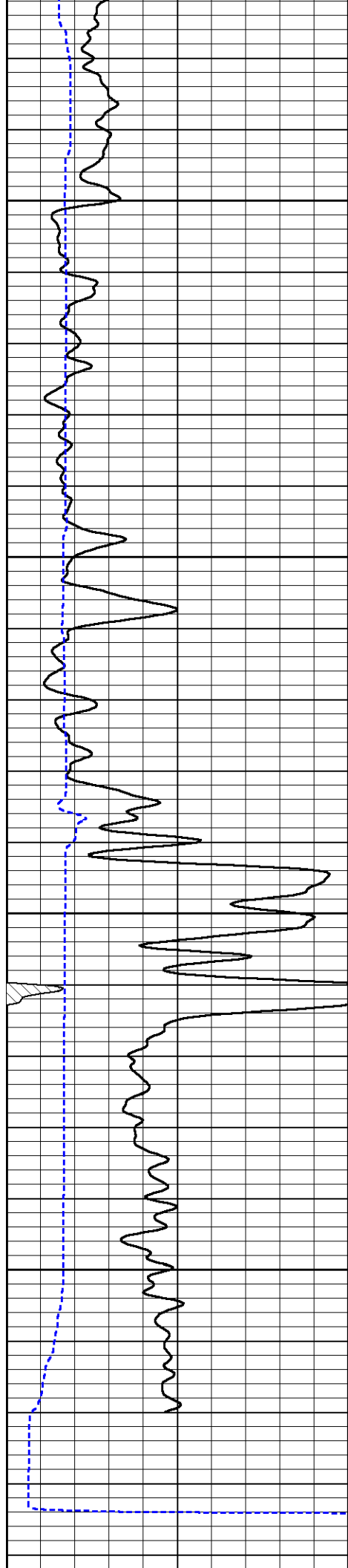
8200

94

8250

77





8300

61

29

8350

45

22

8400

29

14

8450

13

6

Database File		murfin_red poll_10-21.db		Calibration Report			
Dataset Pathname		STKML/pass5.8					
Dataset Creation		Sat Sep 02 00:34:08 2017					
Dual Induction Calibration Report							
Serial-Model:				PSI 91-M&W			
Calibration Performed:				Thu Aug 10 08:41:25 2017			
		Readings		References		Results	
Loop:	Air	Loop		Air	Loop	Gain	Offset
Deep	166.796	835.089		0.000	255.800	mmho/m	0.430
Medium	142.009	1348.560		0.000	255.800	mmho/m	-32.000
							-27.000
Microlog Calibration Report							
Serial-Model:				PSI-01-PSIML			
Performed:				Fri Aug 11 11:41:38 2017			
		Readings		References		Results	
	Zero	Cal		Zero	Cal	m	b
Normal	0.0000	1.0000		0.0000	1.0000	Ohm-m	35000.0000
Inverse	0.0000	1.0000		0.0000	1.0000	Ohm-m	-0.8000
Caliper	1.0001	1.1397		6.5000	18.5000	in	35000.0000
							-0.4000
							100.0000
							-97.1750
Compensated Density Calibration Report							
Serial-Model:				90-1031-M&W			
Source / Verifier:				16955B / 2ci			
Master Calibration Performed:				Wed Aug 02 00:28:57 2017			
Master Calibration							
		Density		Far Detector		Near Detector	
Magnesium	1.755	g/cc		4903.44	6153.79	cps	
Aluminum	2.685	g/cc		934.50	4021.31	cps	
Spine Angle = 75.61			Density/Spine Ratio = 0.543				
		Size		Reading			
Small Ring	8.00	in		1.84			
Large Ring	22.00	in		1.46			

Compensated Neutron Calibration Report

Serial Number: 207-MW
Tool Model: M&W
Calibration Performed: Tues Aug 1 10:30:30 2017

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: Wed Aug 02 00:29:15 2017

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.6000 GAPI/cps



Company MURFIN DRILLING, INC.
Well RED POLL #10-21
Field WILDCAT
County LINCOLN
State COLORADO