



DUAL COMP POROSITY LOG

Pioneer Energy Services

Company AMERICAN WARRIOR, INC.
 Well GANO #10-17
 Field LAKIN NORTHWEST
 County KEARNY
 State KANSAS

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Location: API #: 15-093-21966-00-00
 2505' FSL & 335' FWL
 SEC 17 TWP 25S RGE 36W
 Permanent Datum GROUND LEVEL Elevation 3027'
 Log Measured From KELLY BUSHING
 Drilling Measured From KELLY BUSHING
 Other Services DIL/MEL
 Elevation K.B. 3038'
 D.F. N/A
 G.L. 3027'

Date	03/26/2018						
Run Number	ONE						
Type Log	CNL/CDL						
Depth Driller	5050'						
Depth Logger	5048'						
Bottom Logged Interval	5019'						
Top Logged Interval	3400'						
Type Fluid In Hole	CHEMICAL						
Salinity, PPM CL	2200						
Density	9.35						
Level	FULL						
Max. Rec. Temp. F	122						
Operating Rig Time	3 HOURS						
Equipment -- Location	91 HAYS						
Recorded By	D. SCHMIDT						
Witnessed By	LUKE THOMPSON						
Borehole Record		Casing Record					
Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0'	1788'	8.625"	23#	0'	1788'
TWO	7.875"	1788'	TD				

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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.

LAKIN,
 3 SOUTH TO 120 ROAD, 1 WEST,
 1 SOUTH, 1 1/2 WEST
 SOUTH INTO

Log Measured From: KELLY BUSHING 11 Ft. Above Permanent Datum

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

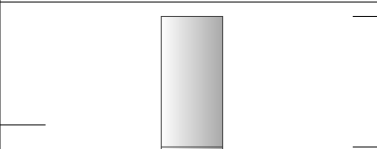
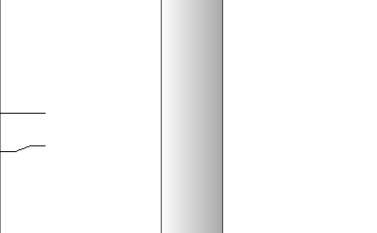
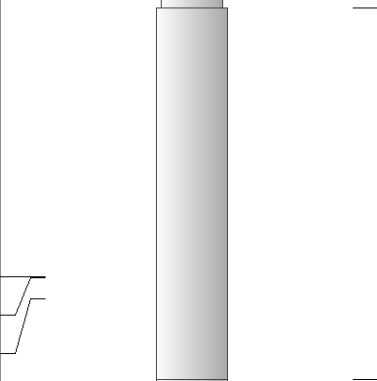
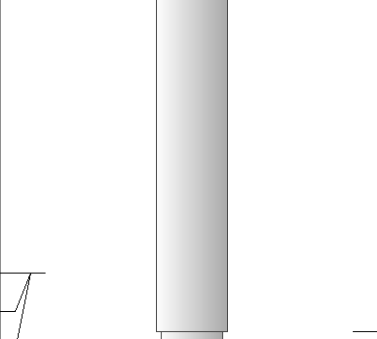
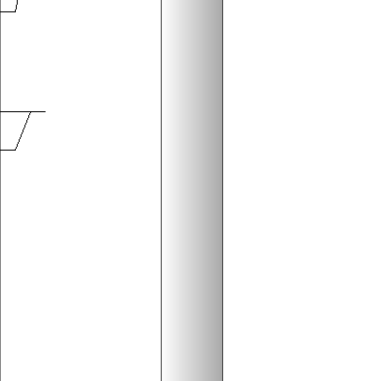
Your Pioneer Energy Services Crew		This Log Record Was Witnessed By	
Engineer: D. SCHMIDT	Operator:	Primary Witness: LUKE THOMPSON	Secondary Witness:
Operator:	Operator:	Secondary Witness:	Secondary Witness:
Operator:		Secondary Witness:	

Log Variables

Database C:\ProgramData\Warrior\Data\americanwarrior_gano#10-17.db
 Dataset field/well/STKML/pass4.1/_vars_

Top - Bottom

M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	-123	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	0	0	5.5	0	5048	122	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 (227-771)	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

CILM 4.70

SP 0.20

DIL-PSI HIGH TEMP (933 (HT))

18.50

3.50

220.00

Dataset: americanwarrior_gano#10-17.db: field/well/STKML/pass4.1
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

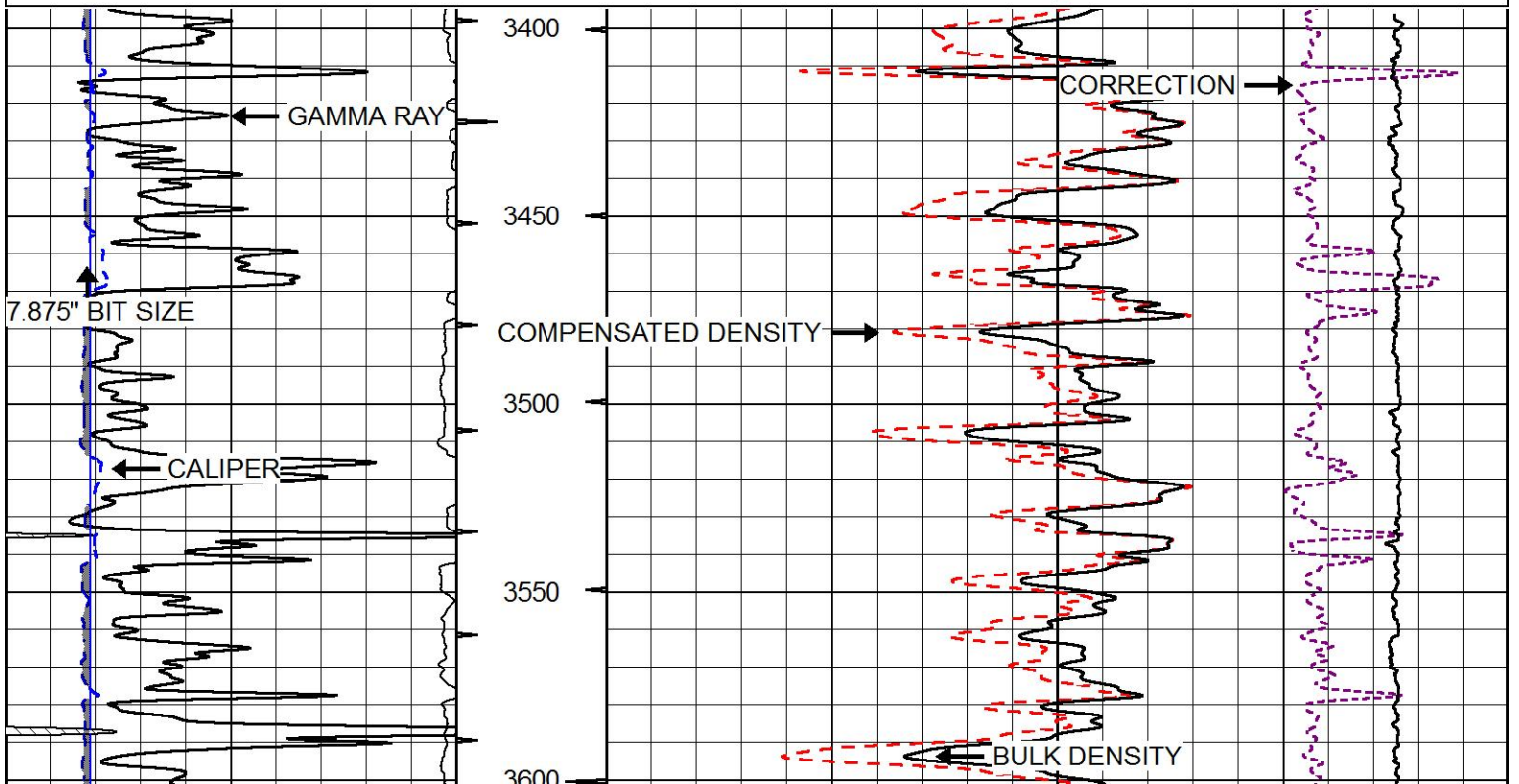


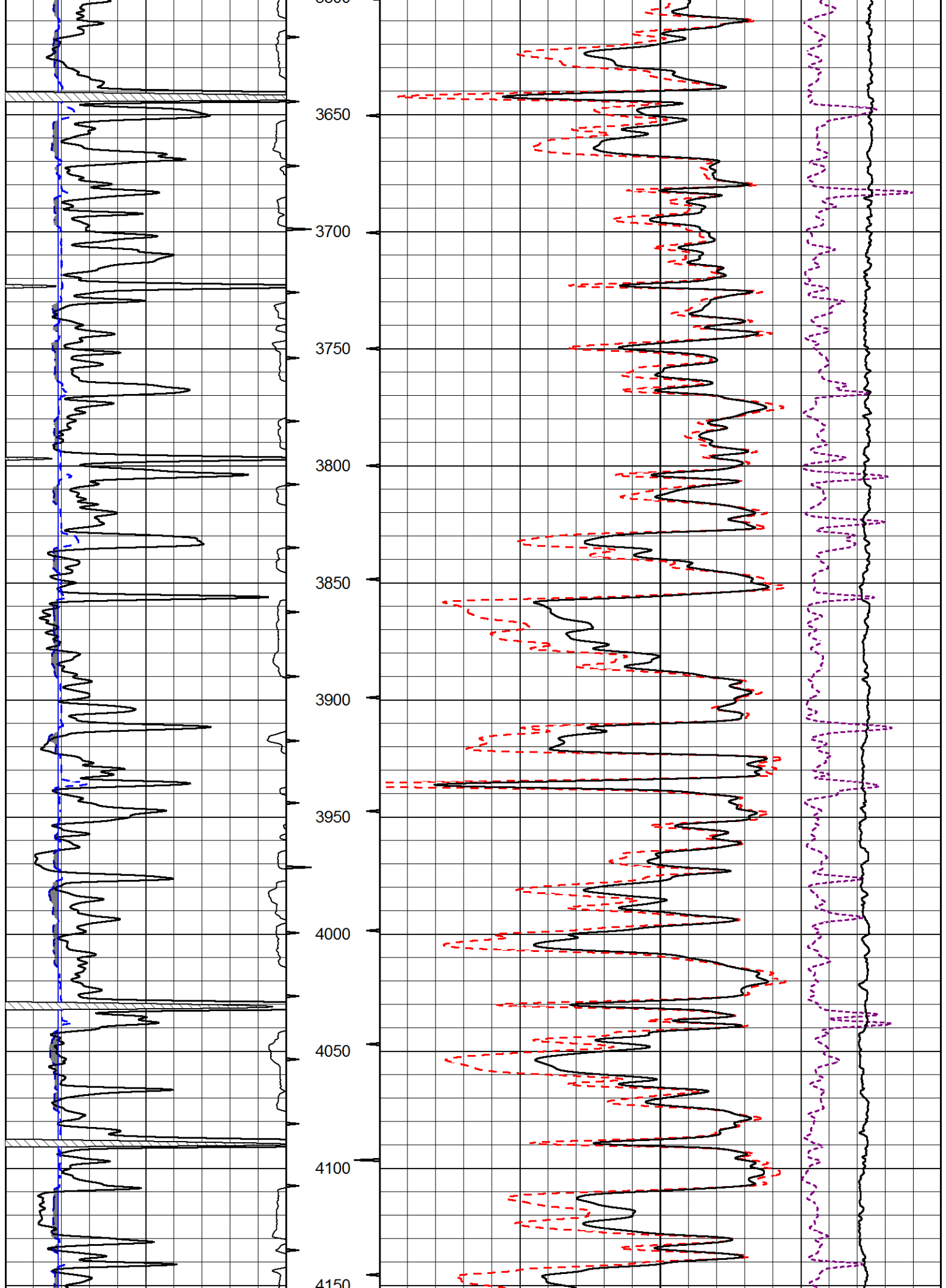
MAIN PASS

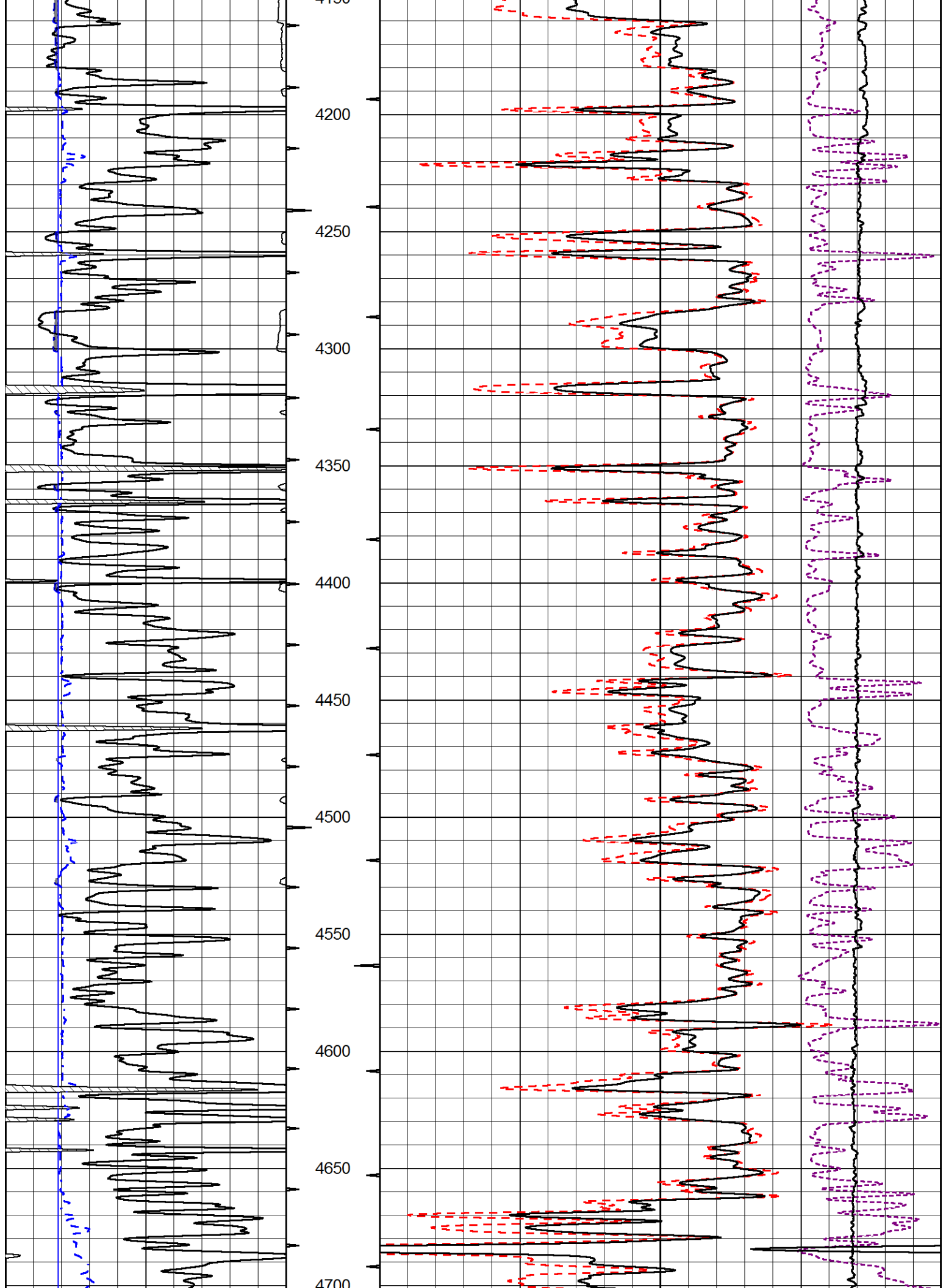
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 Dataset Pathname STKML/pass4.1
 Presentation Format cdl
 Dataset Creation Mon Mar 26 13:43:25 2018
 Charted by Depth in Feet scaled 1:600

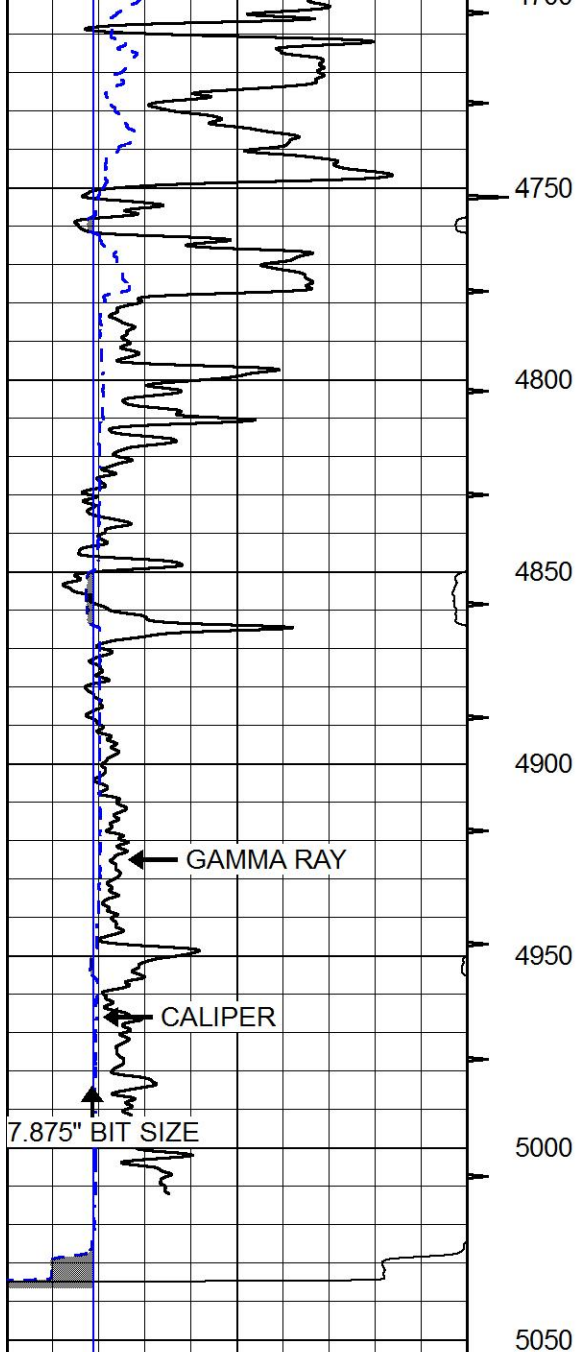
0	Gamma Ray (GAPI)	150
6	Caliper (in)	16

30	Compensated Density (2.71 MA)	(pu)	-10	
2	Bulk Density (g/cc)		3	
15000	Line Tension (lb)		0	
		-0.25	Correction (g/cc)	0.25

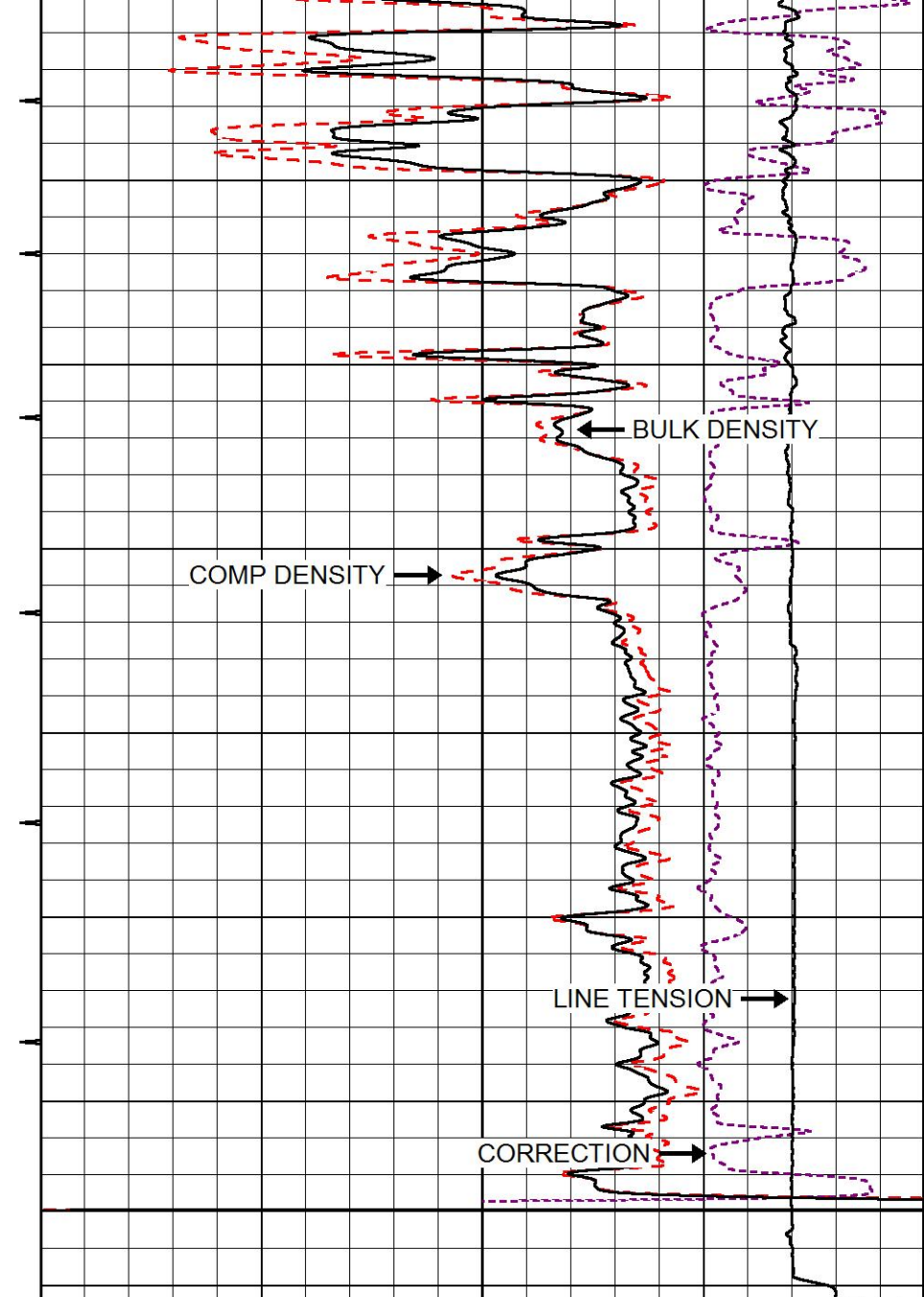








0	Gamma Ray (GAPI)	150
6	Caliper (in)	16



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



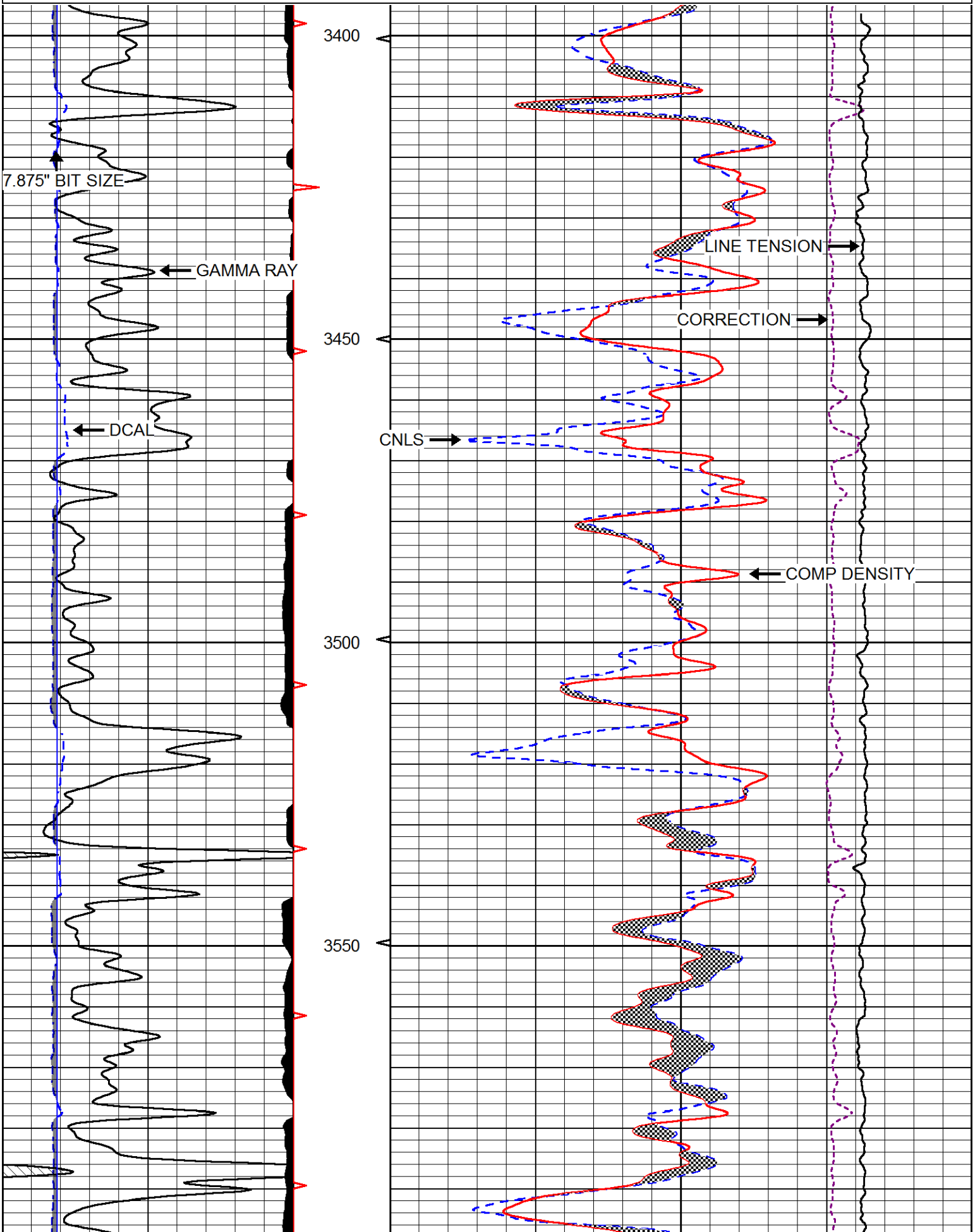
MAIN PASS

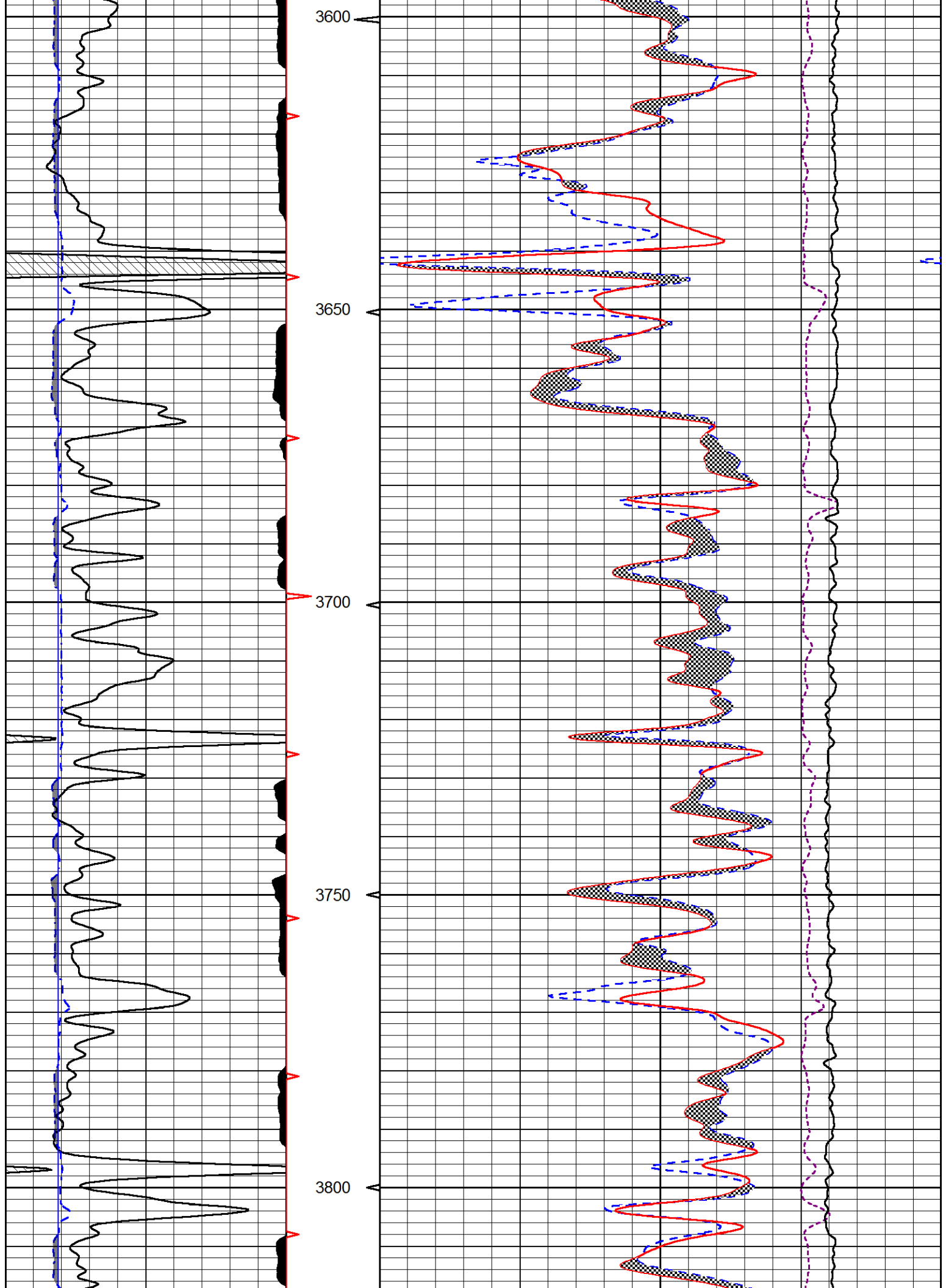
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Dataset Creation	Mon Mar 26 13:43:25 2018
Charted by	Depth in Feet scaled 1:240

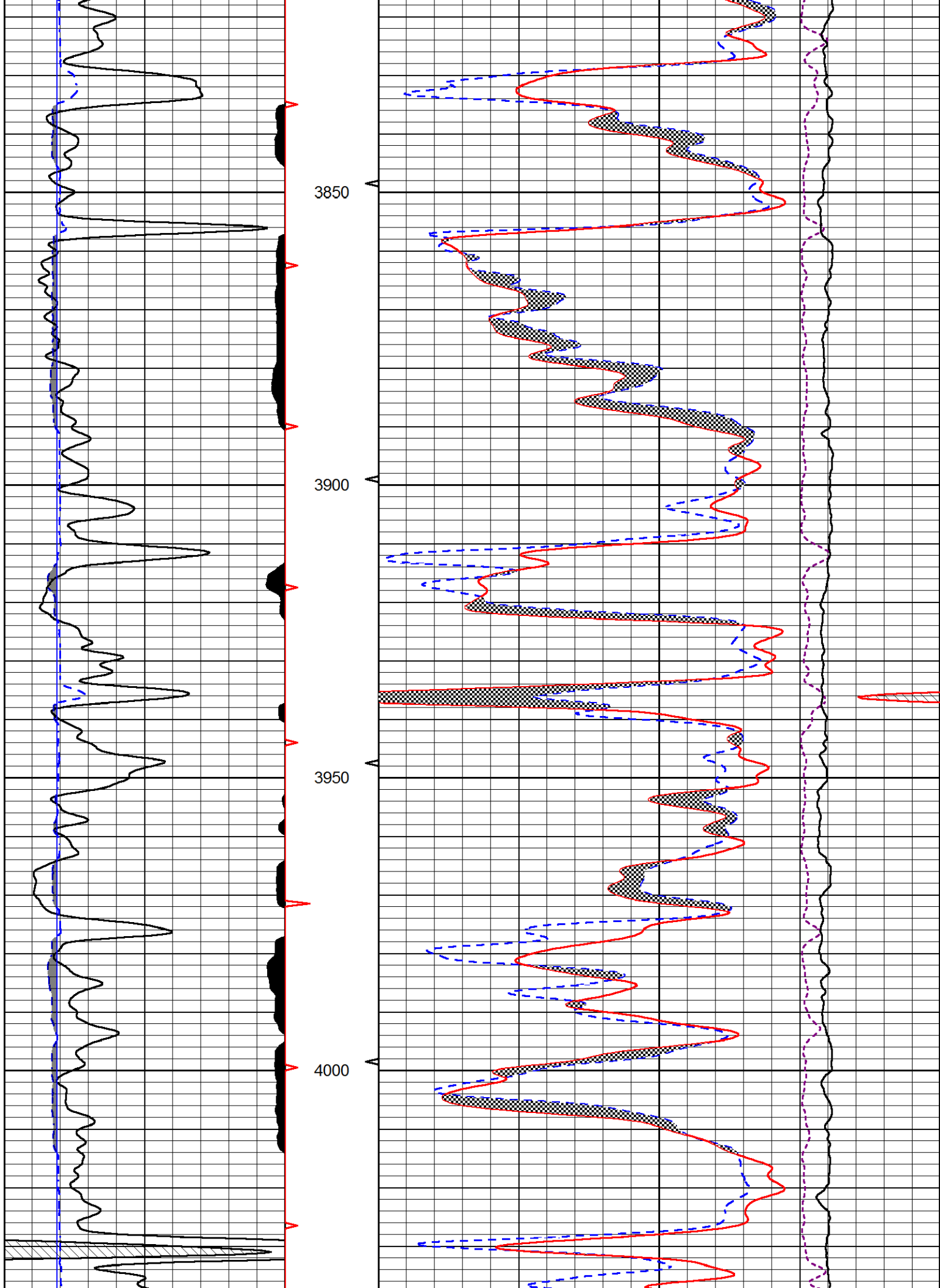
0	Gamma Ray (GAPI)	150	30	CNI S (pu)	-10
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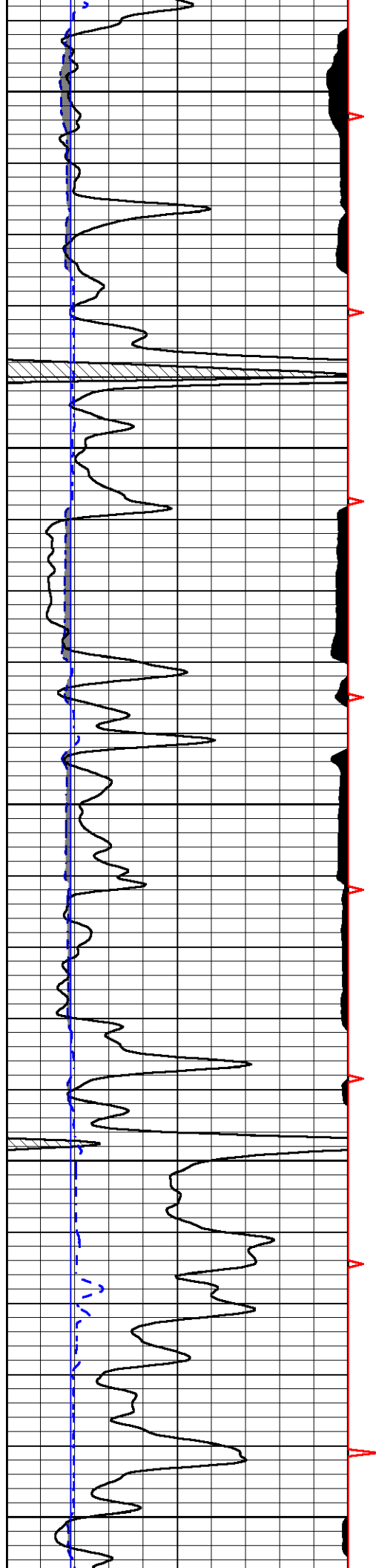
6 DCAL (in) 16

30 Compensated Density 2.71g/cc (pu) -10
10000 Line Tension (lb) 0
-0.75 Correction (g/cc) 0.75









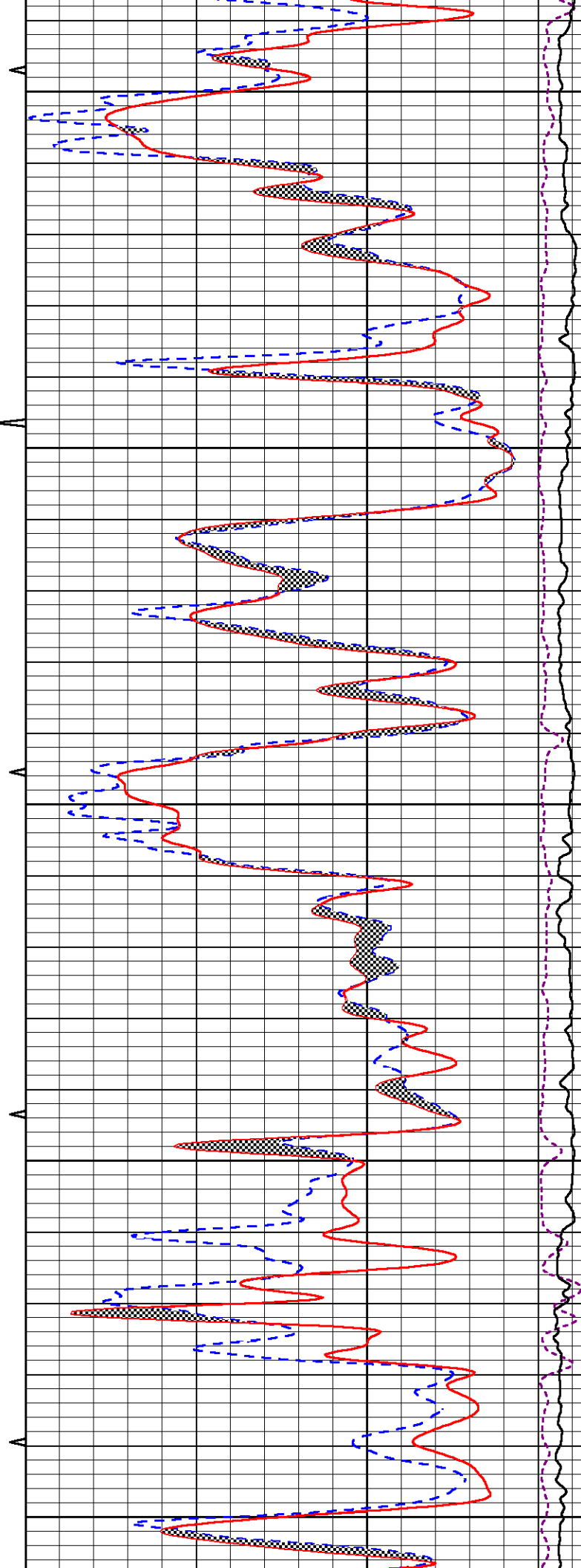
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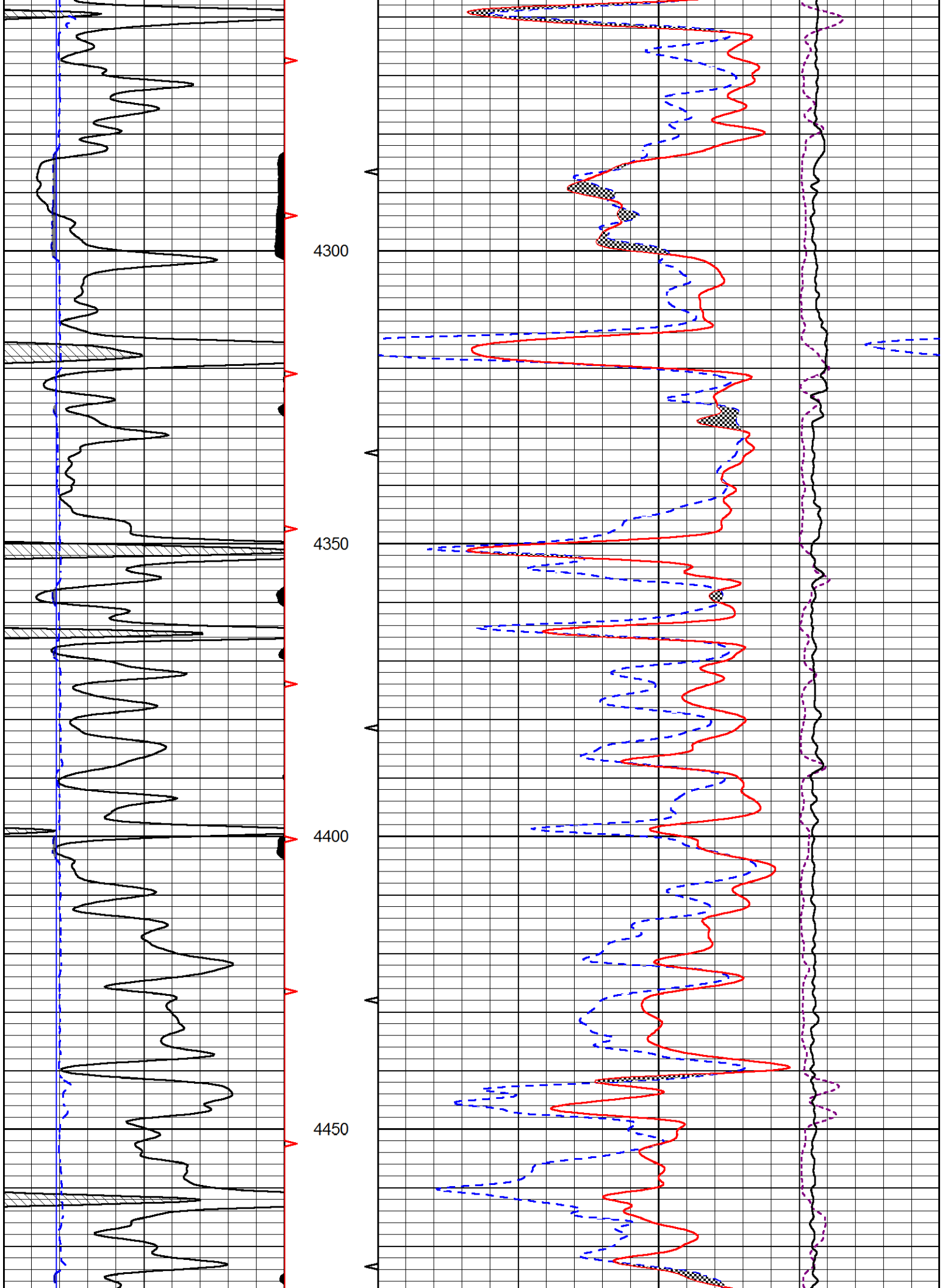
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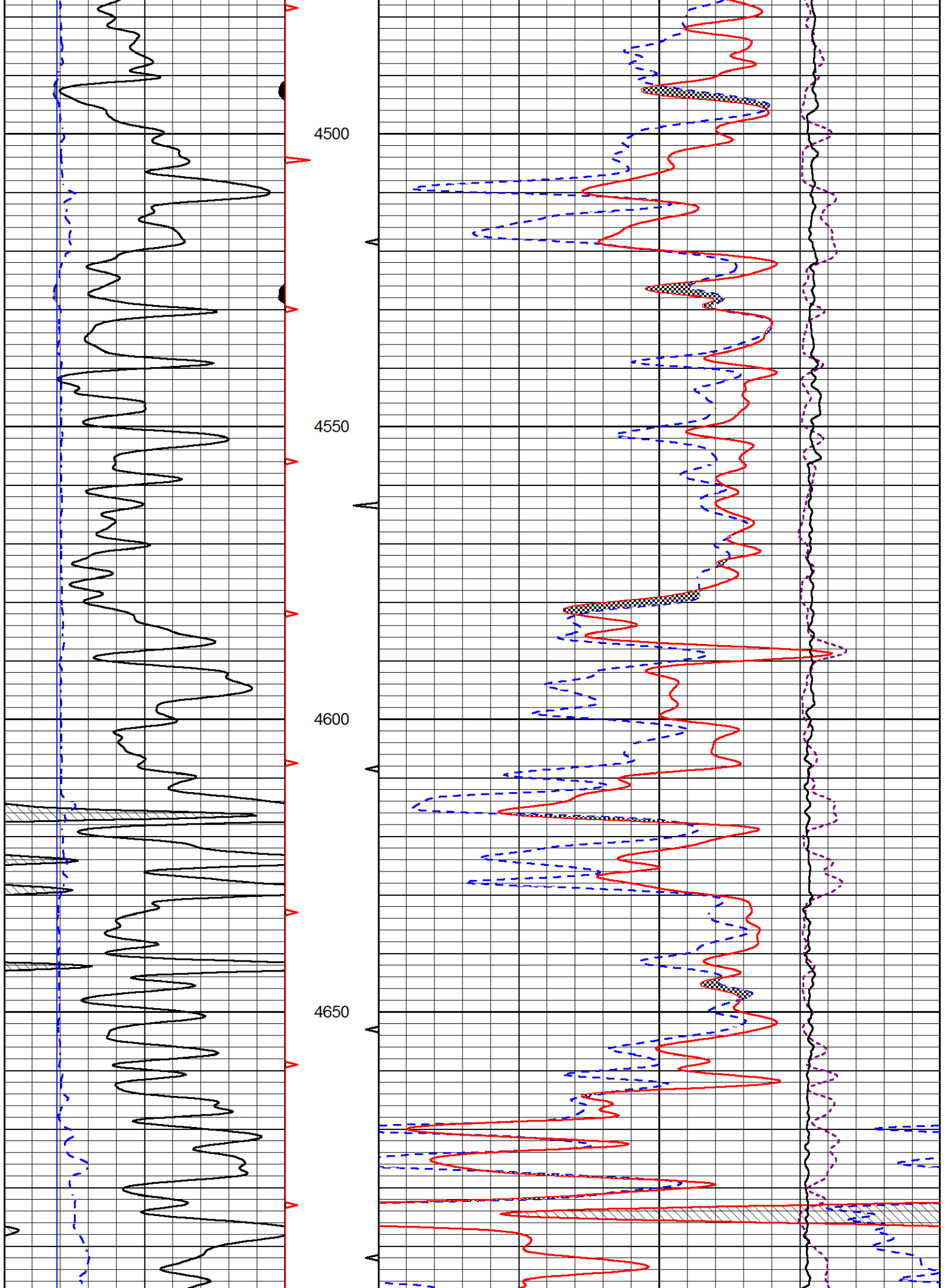
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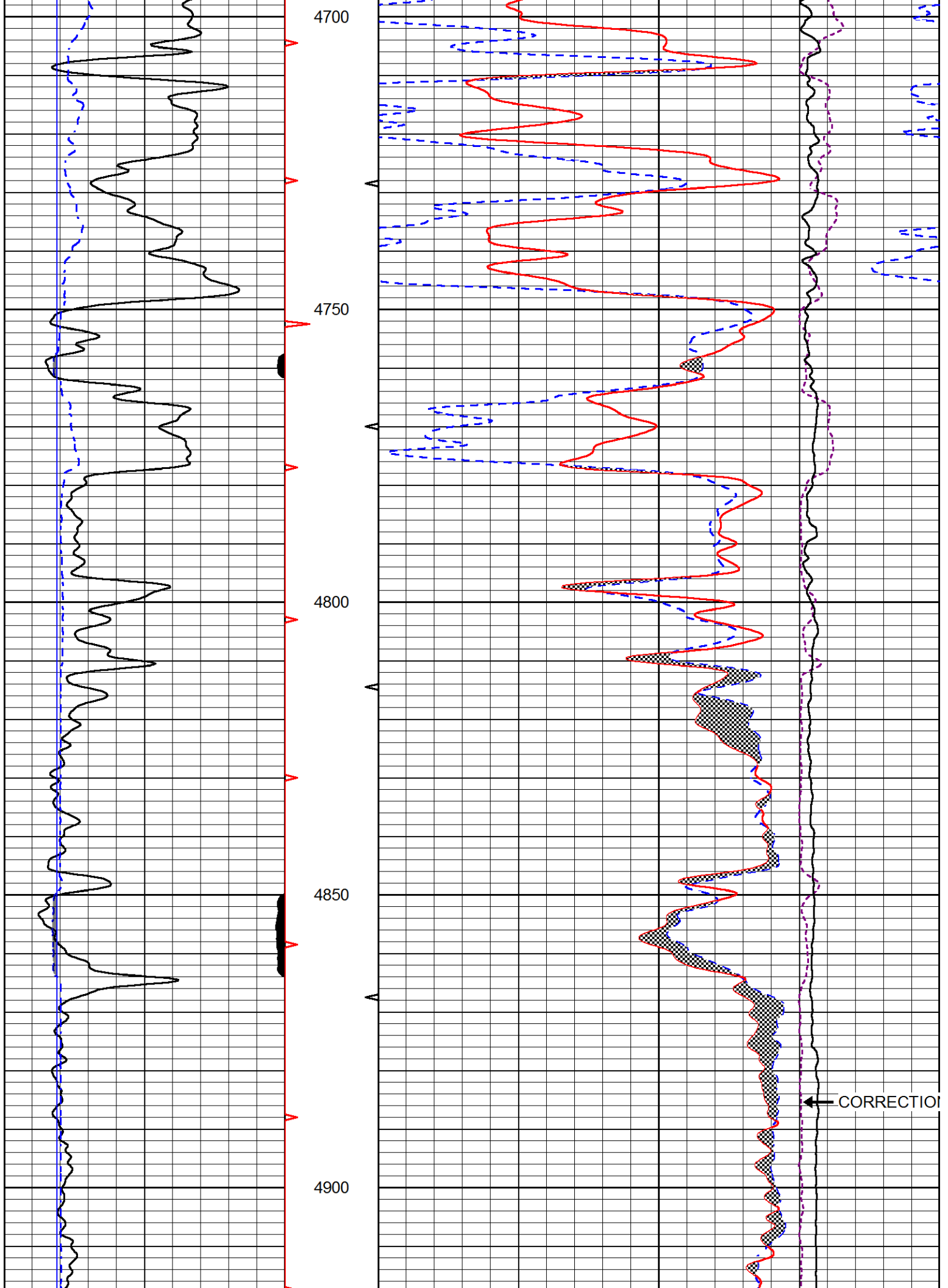
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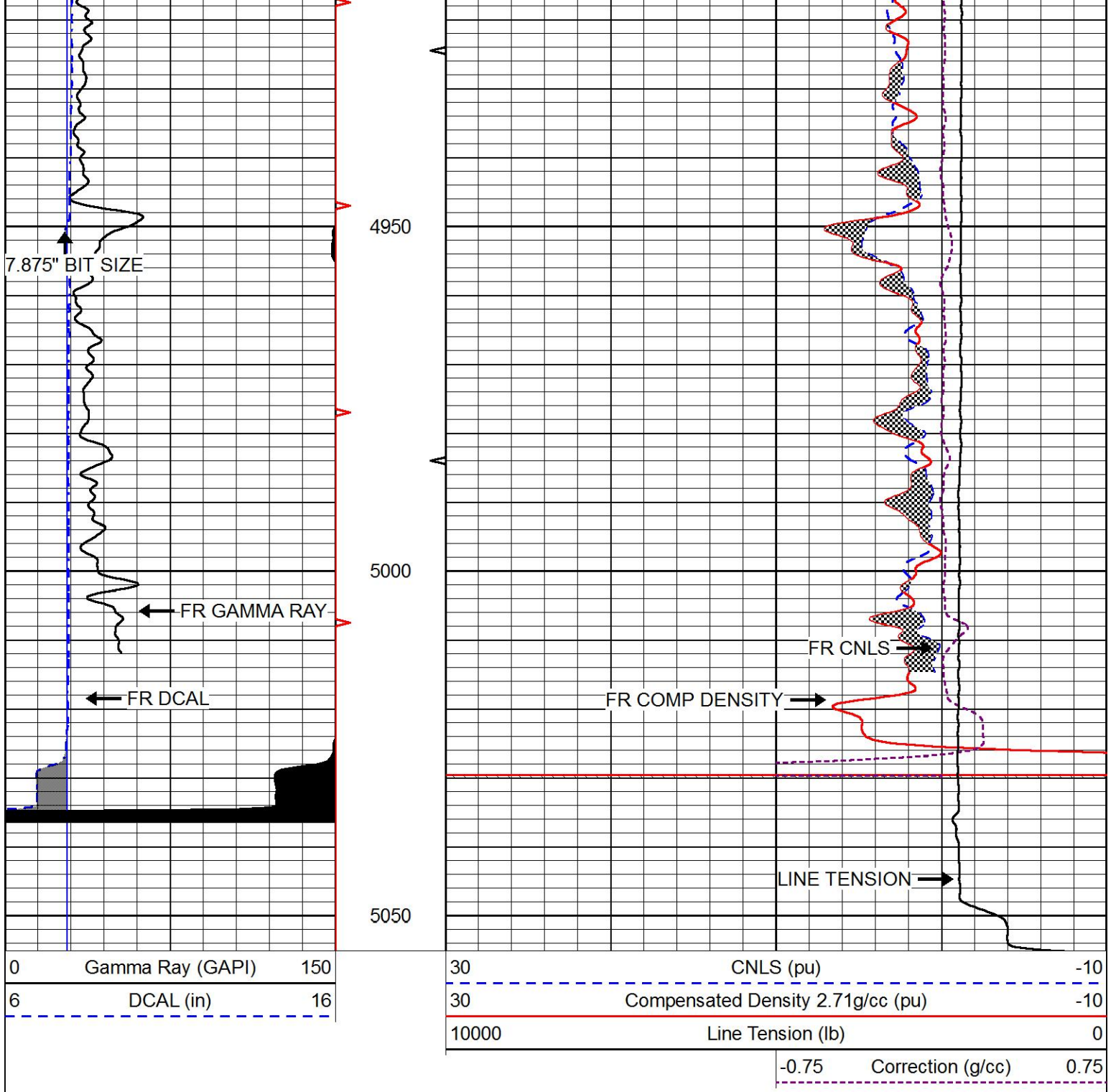
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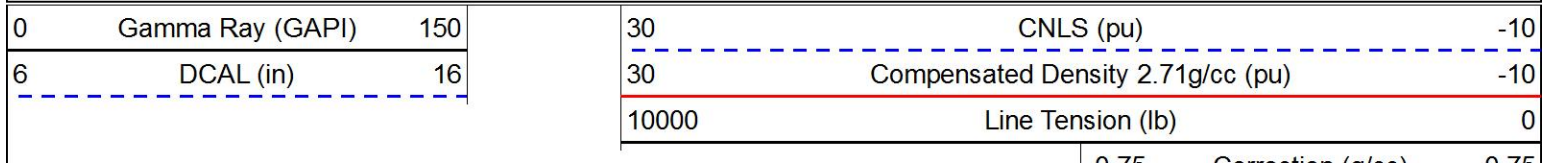


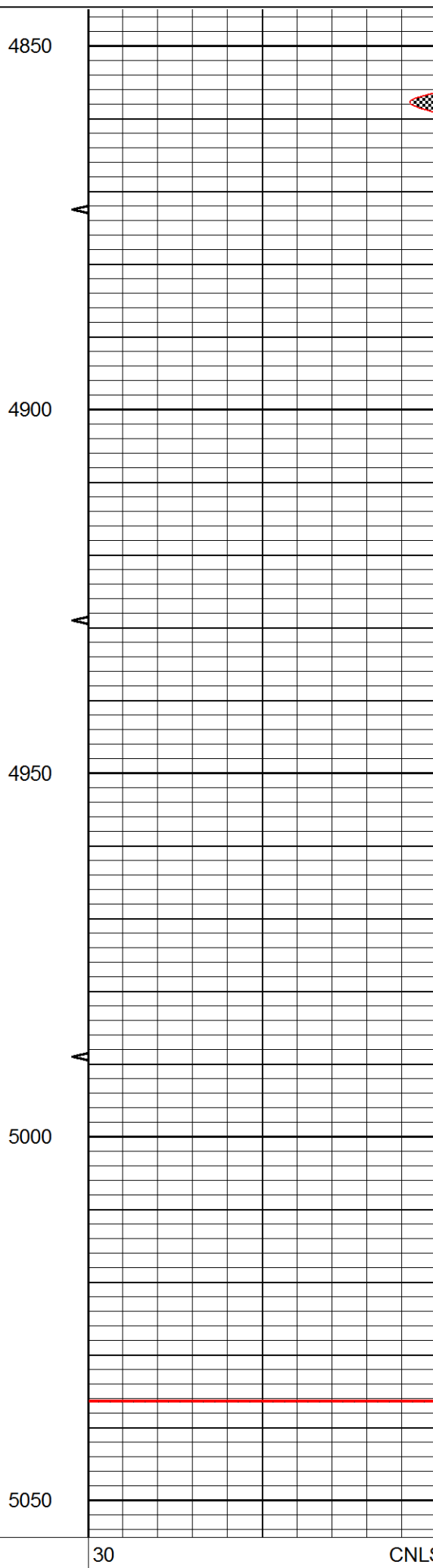
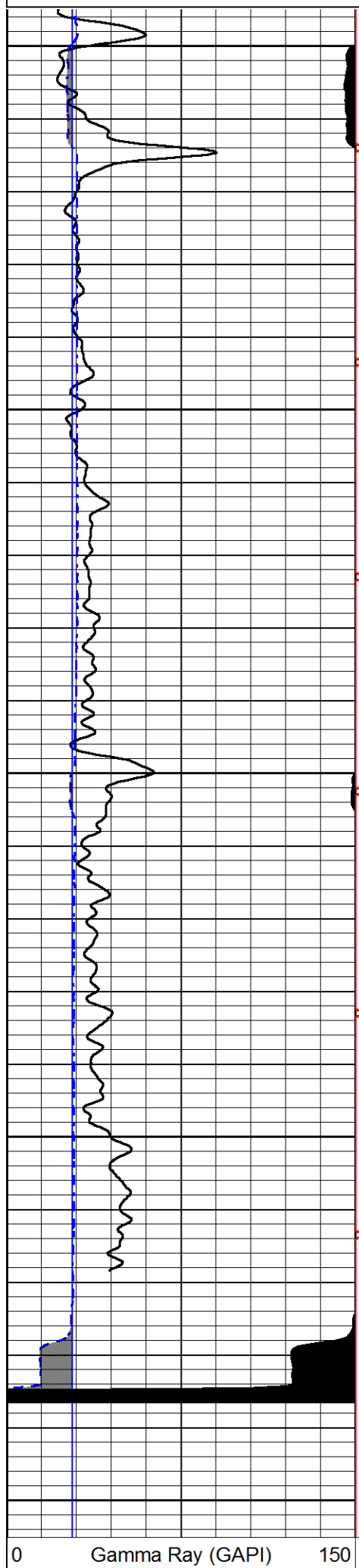




REPEAT SECTION

Database File americanwarrior_gano#10-17.db
 Dataset Pathname STKML/pass2.1
 Presentation Format cndlspec
 Dataset Creation Mon Mar 26 13:50:37 2018
 Charted by Depth in Feet scaled 1:240





-0.75 Correction (g/cc) 0.75

4850

4900

4950

5000

5050

6	DCAL (in)	16	30	Compensated Density 2.71g/cc (pu)	-10
			10000	Line Tension (lb)	0
				-0.75 Correction (g/cc)	0.75

Calibration Report

Database File americanwarrior_gano#10-17.db
Dataset Pathname STKML/pass4.1
Dataset Creation Mon Mar 26 13:43:25 2018

Dual Induction Calibration Report

Serial-Model: 933 (HT)-PSI HIGH TEMP
Calibration Performed: Sun Feb 18 17:32:17 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.000	mmho/m	0.700	-18.350
Medium	142.000	1349.000	0.000	255.000	mmho/m	0.565	-61.000

Microlog Calibration Report

Serial-Model: PSI-01-PSIML
Performed: Sun Mar 18 23:48:42 2018

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	19000.0000	-0.7000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	24000.0000	-0.6000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-65.8500

Compensated Density Calibration Report

Serial-Model: 227-771-M&W
Source / Verifier: 16955B / 2ci
Master Calibration Performed: Fri Mar 09 21:14:39 2018

Master Calibration

	Density		Far Detector	Near Detector	
		g/cc			cps
Magnesium	1.755	g/cc	4919.18	6345.34	cps
Aluminum	2.665	g/cc	911.94	4081.94	cps
Spine Angle = 75.33			Density/Spine Ratio = 0.522		
	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: FRI MAR 9 10:30:30 2018

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:	Mon Jan 15 11:20:44 2018	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.6000	GAPI/cps



Company	AMERICAN WARRIOR, INC.
Well	GANO #10-17
Field	LAKIN NORTHWEST
County	KEARNY
State	KANSAS