



**BOREHOLE COMPENSATED
SONIC LOG**

Company JOHN O. FARMER, INC.
Well DENTON #1
Field HAGINS
County LYON **State KANSAS**

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 Well DENTON #1
 Field HAGINS
 County LYON
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Location: API #: 15-111-20538-00-00
 500' FNL & 2345' FEL
 SEC 13 TWP 17S RGE 11E
 Permanent Datum GROUND LEVEL Elevation 1252'
 Log Measured From KELLY BUSHING
 Drilling Measured From KELLY BUSHING

Other Services
 CNL/CDL
 DIL/MEL

Date 5/27/2018

Run Number TWO
 Type Log BHCS
 Depth Driller 2950'
 Depth Logger 2951'
 Bottom Logged Interval 2939'
 Top Logged Interval 200'
 Type Fluid In Hole CHEMICAL
 Salinity, PPM CL 1700
 Density 9.0
 Level FULL
 Max. Rec. Temp. F 106
 Operating Rig Time 5 HOURS
 Equipment -- Location 91 HAYS
 Recorded By D. SCHMIDT
 Witnessed By AUSTIN KLAUS

Run No.	Bit	Borehole Record		Casing Record	
		From	To	From	To
ONE	12.25"	0'	220'	8.625"	23#
TWO	7.875"	220'	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.
 ADMIRE (HWY 56 & 99),
 5 SOUTH TO 290 RD, 2 1/2 WEST,
 SOUTH INTO

Log Measured From: KELLY BUSHING 8 Ft. Above Permanent Datum

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

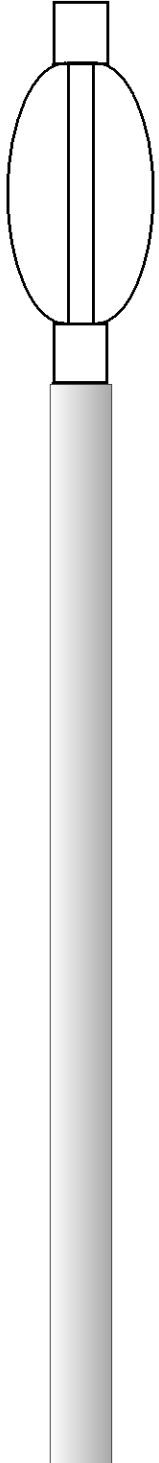


Your Pioneer Energy Services Crew	This Log Record Was Witnessed By
Engineer: D. SCHMIDT	Primary Witness: AUSTIN KLAUS
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

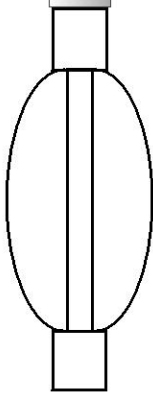
Log Variables

Database C:\ProgramData\Warrior\Data\john o farmer_denton 1.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	96	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	90	0	5.5	0	2951	106	7.875

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			CENT-PENGO (3-PENGO)	5.50	3.00	70.00
WVF4 WVF1	13.50 13.50		SLT-PENGO (0001)	16.00	3.50	300.00
WVF3 WVF2	11.50 11.50					



CENT-PENGO (4-PENGO)

5.50

3.00

70.00

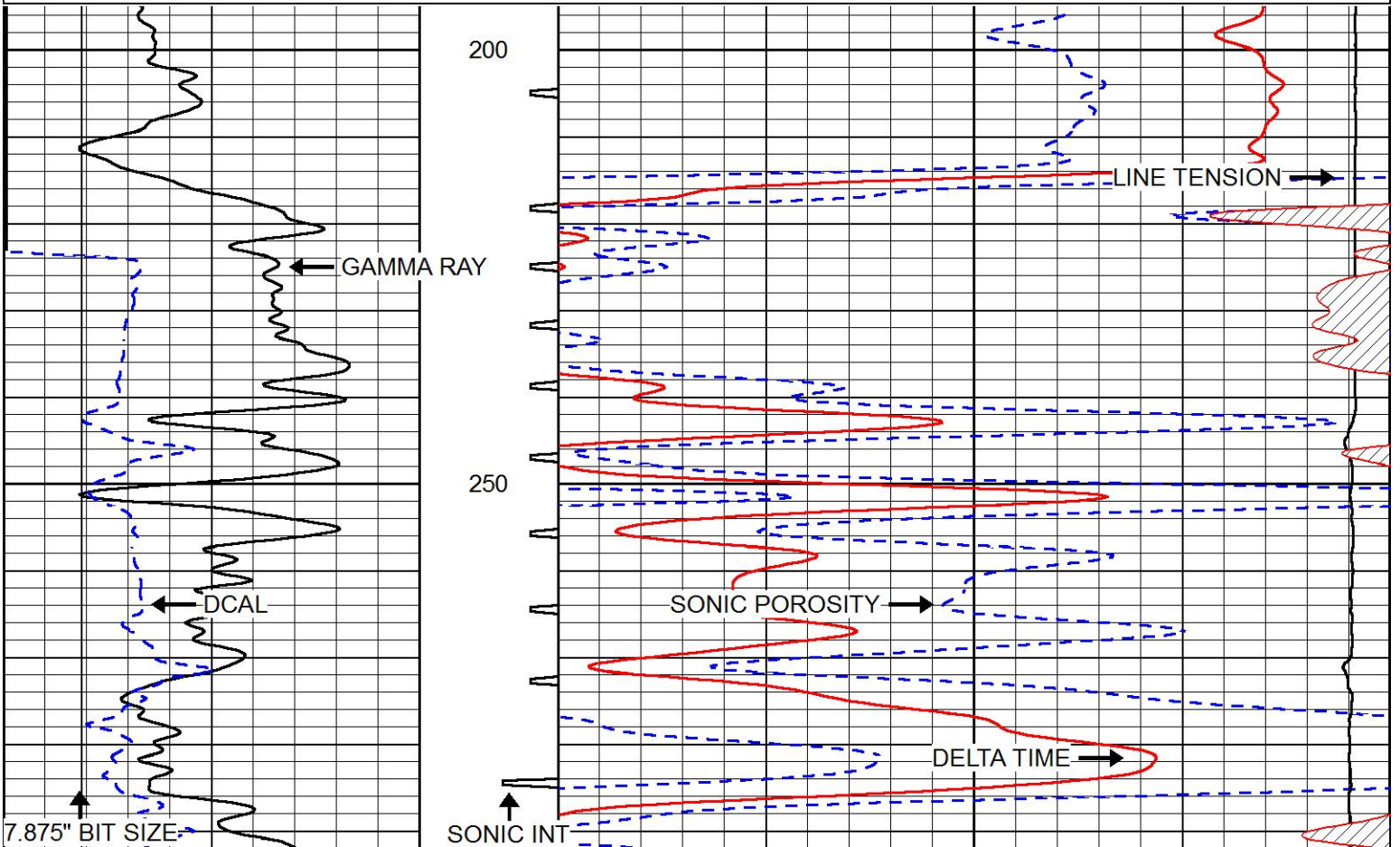
Dataset: john o farmer_denton 1.db: field/well/SON/pass2
 Total length: 27.00 ft
 Total weight: 440.00 lb
 O.D.: 3.50 in

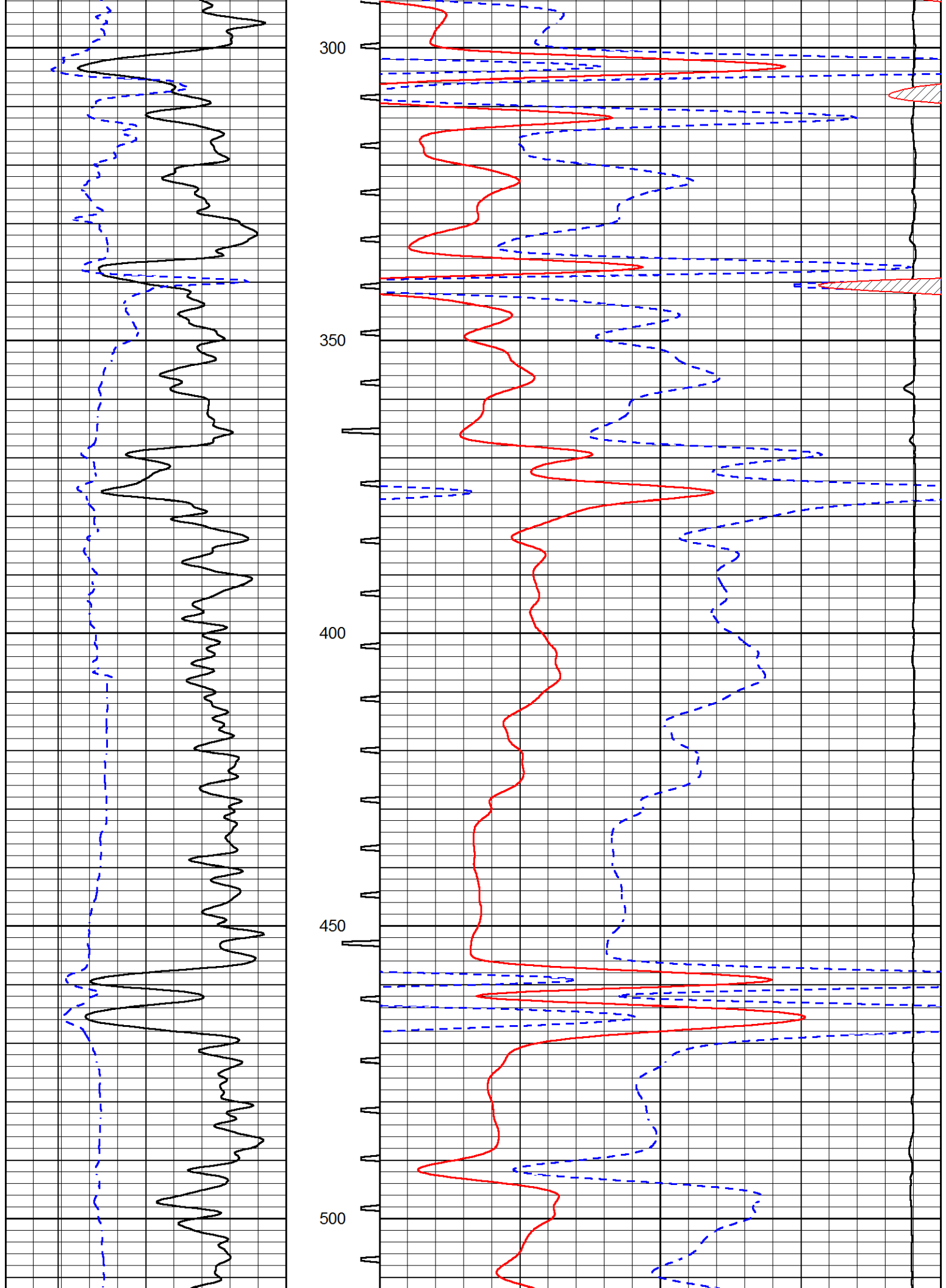


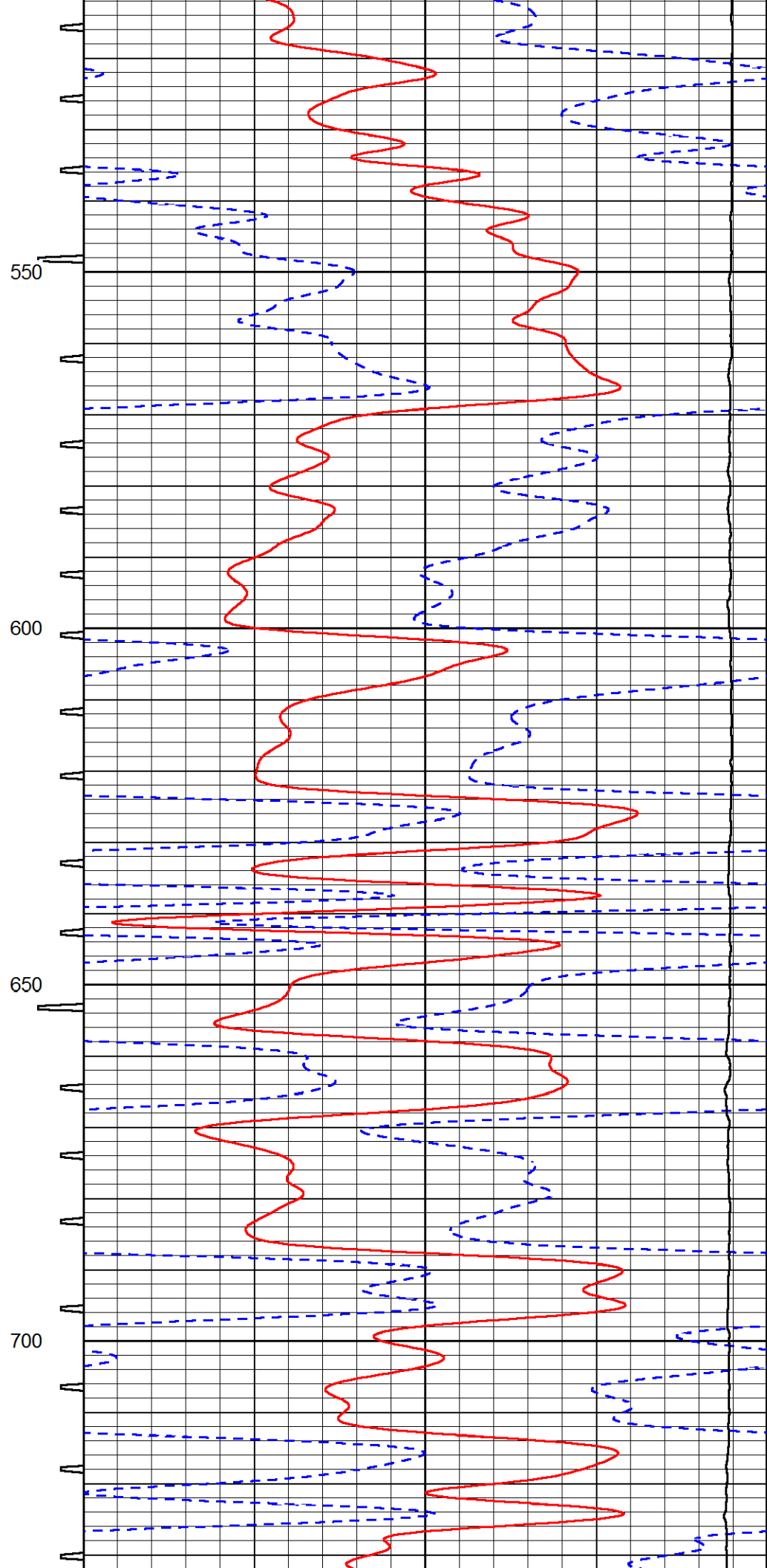
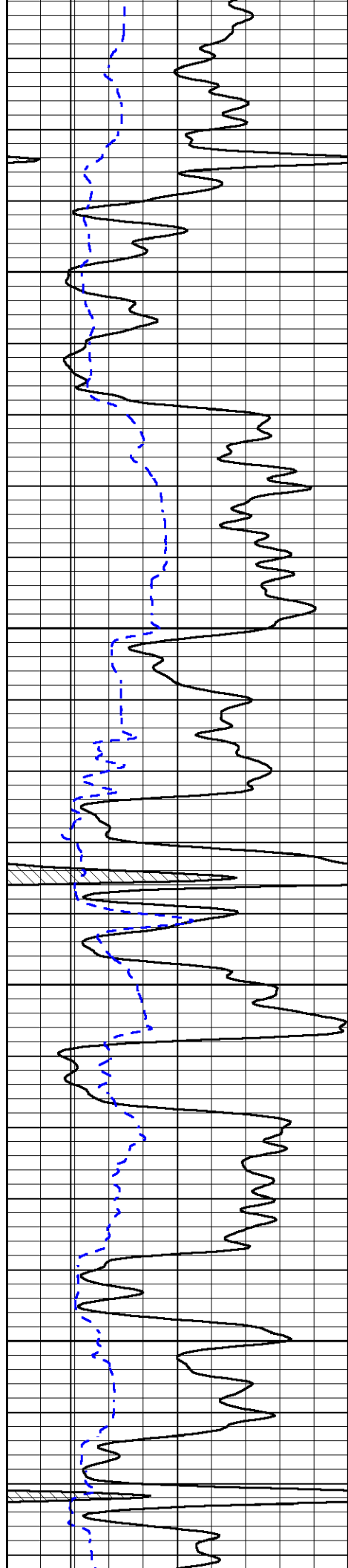
MAIN PASS

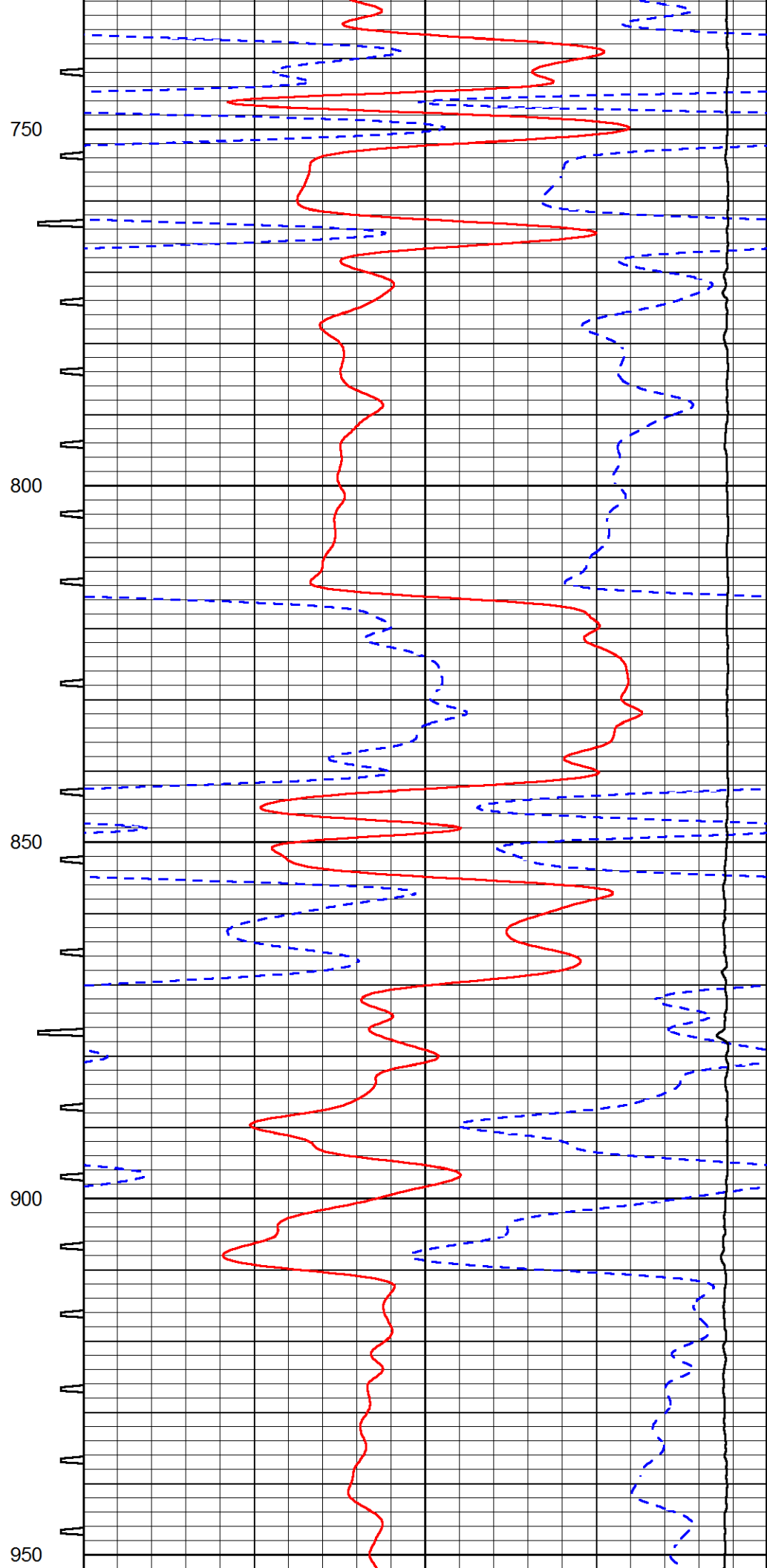
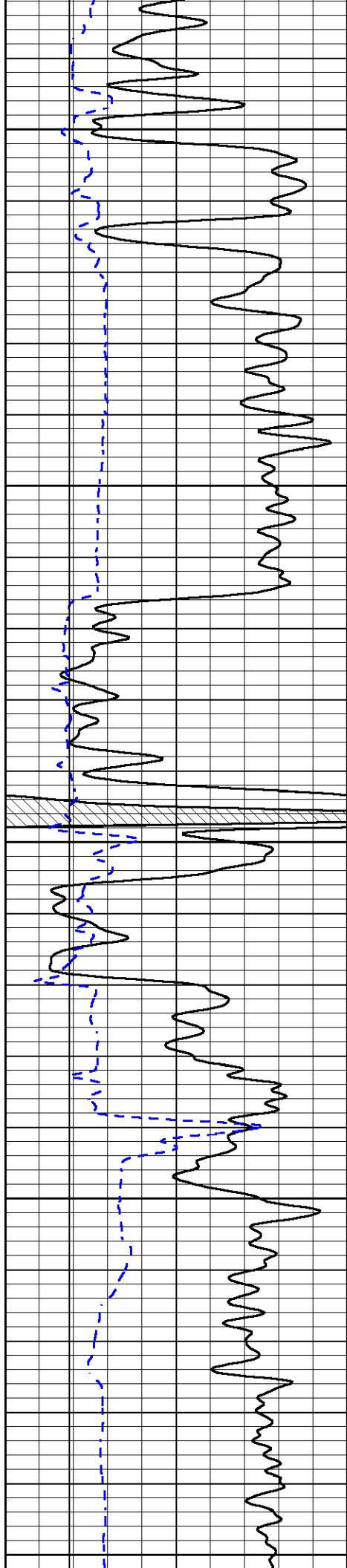
Database File john o farmer_denton 1.db
 Dataset Pathname STKML/pass4.1
 Presentation Format sonic
 Dataset Creation Sun May 27 23:34:05 2018
 Charted by Depth in Feet scaled 1:240

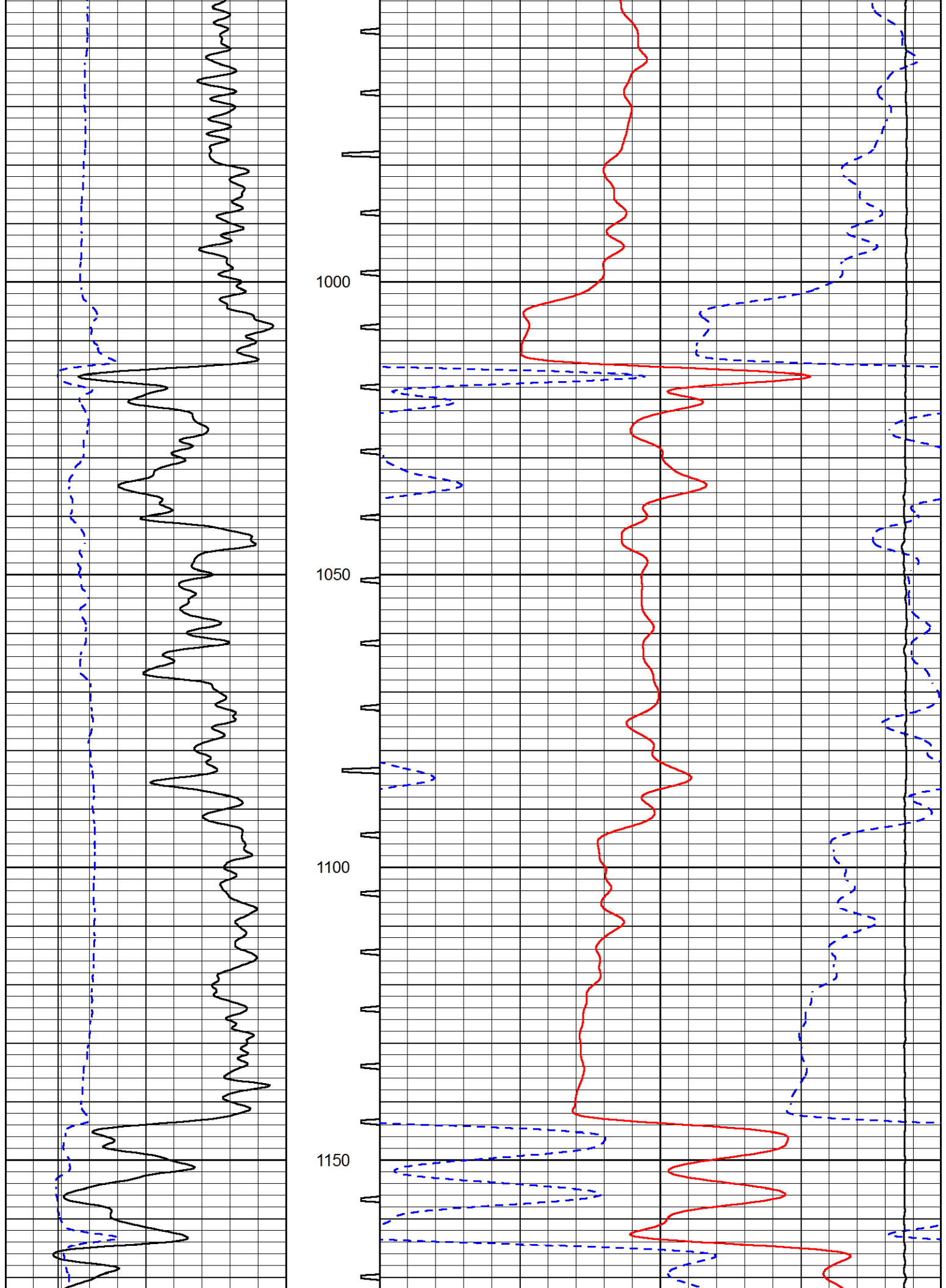
0	Gamma Ray (GAPI)	150	Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
150	GR (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu)	-10
6	DCAL (in)	16		15000	LTEN (lb) (lb)	0

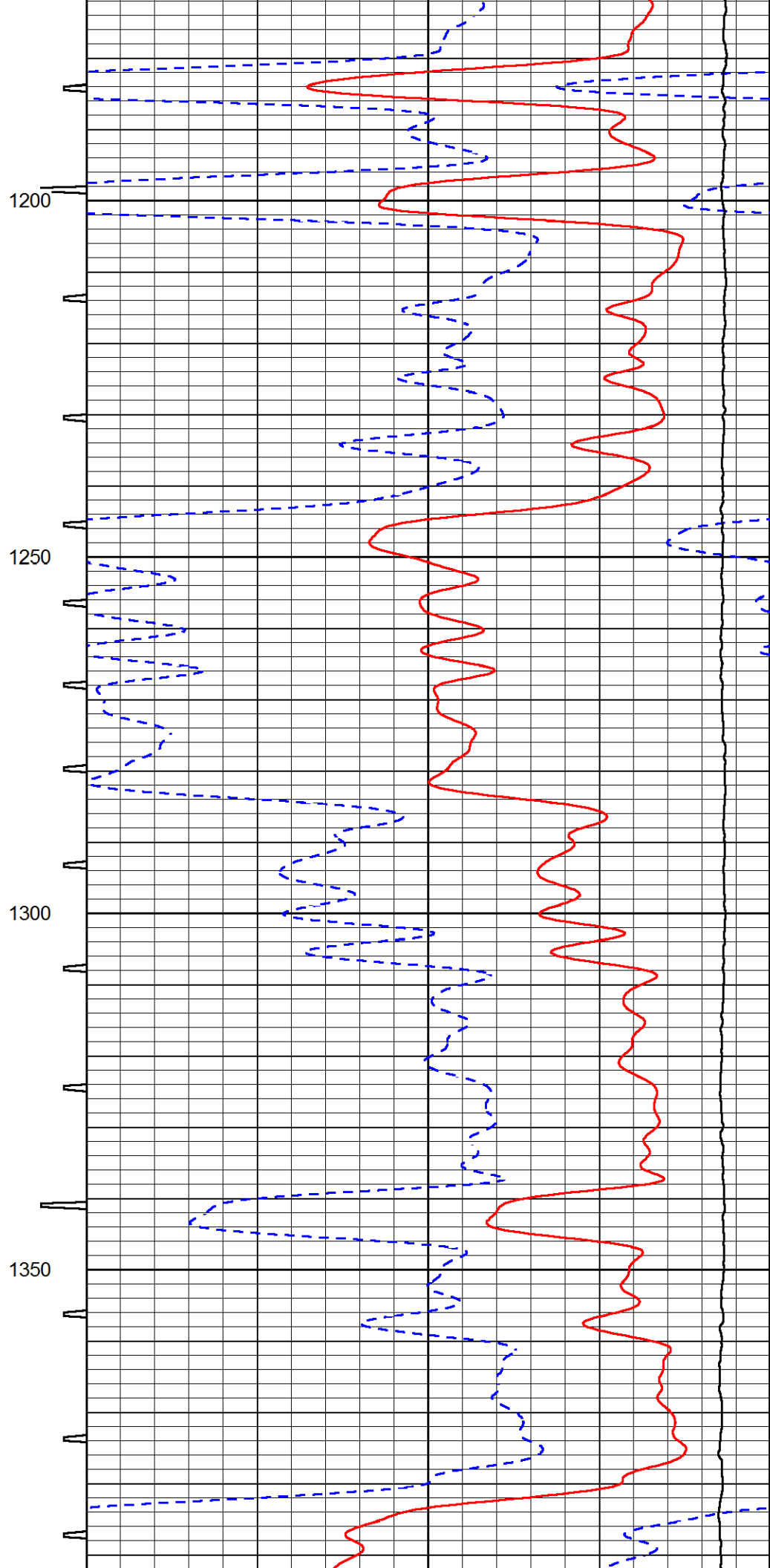
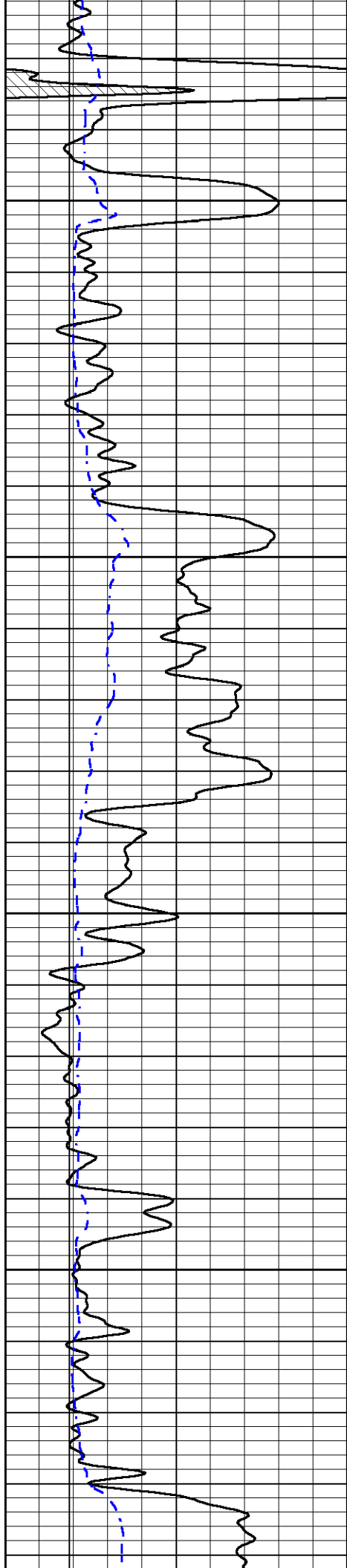


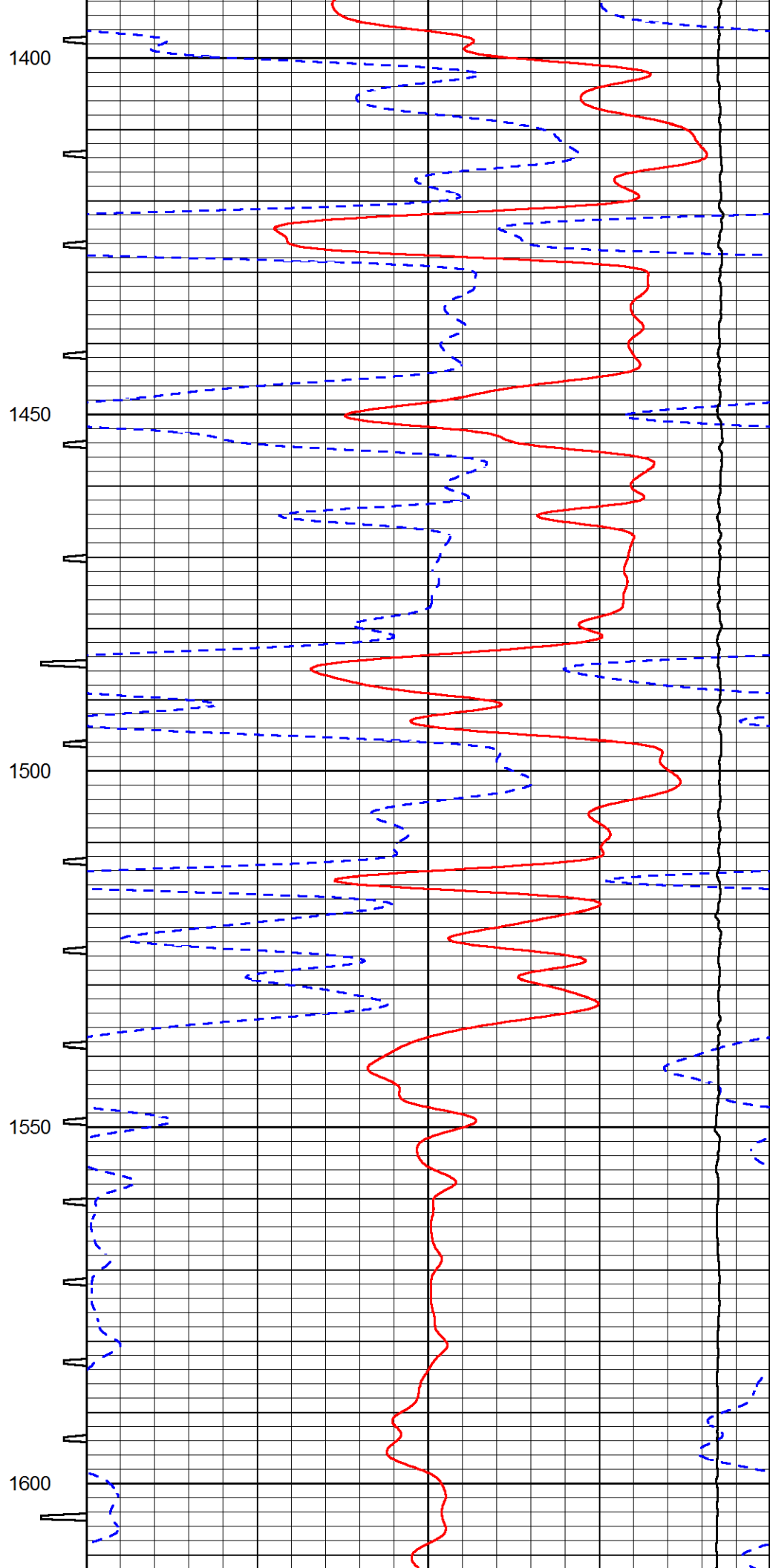
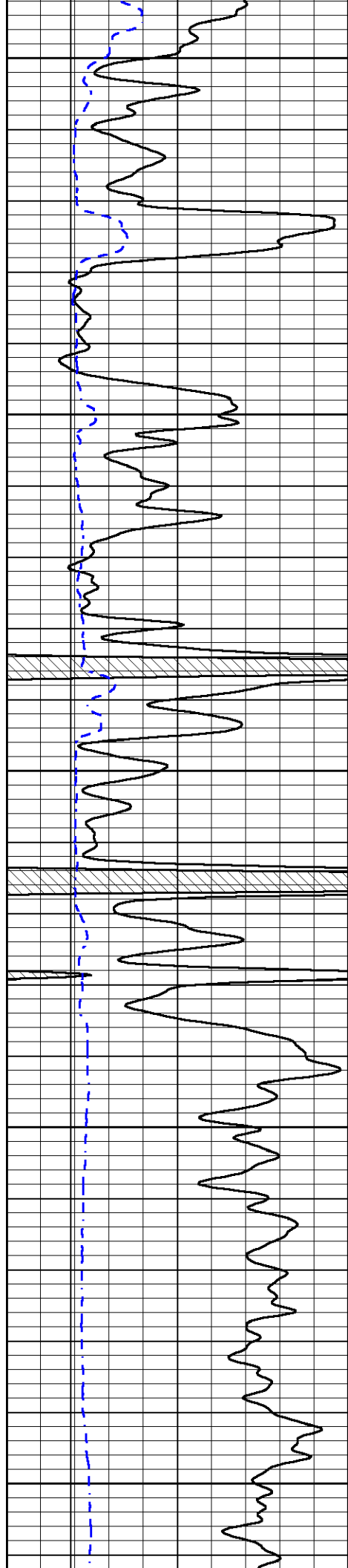


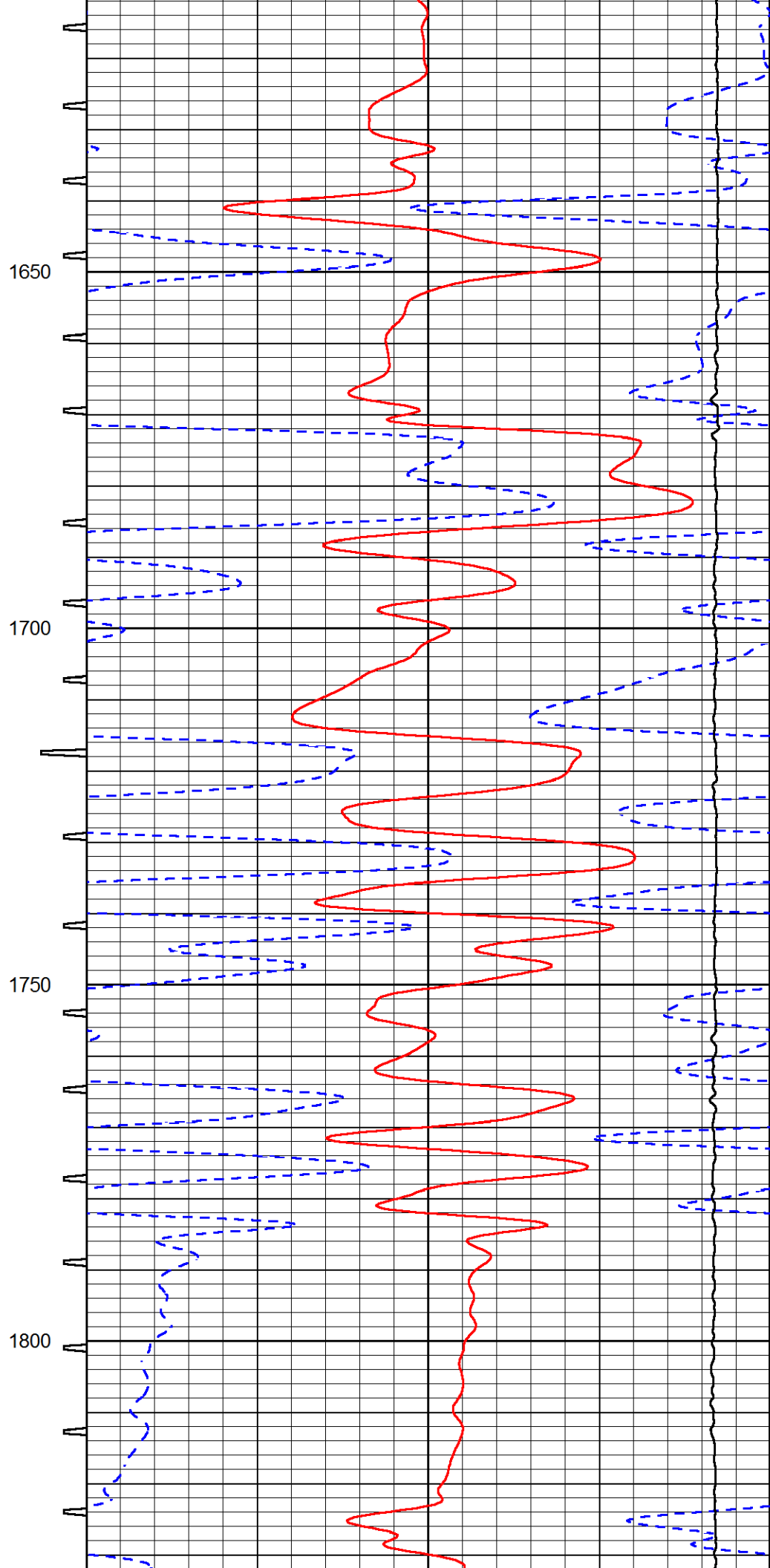
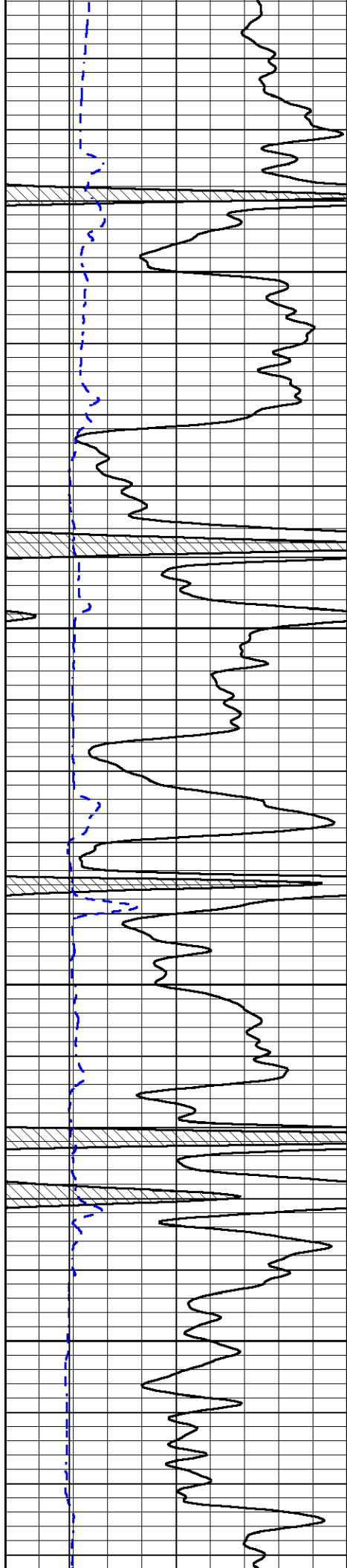










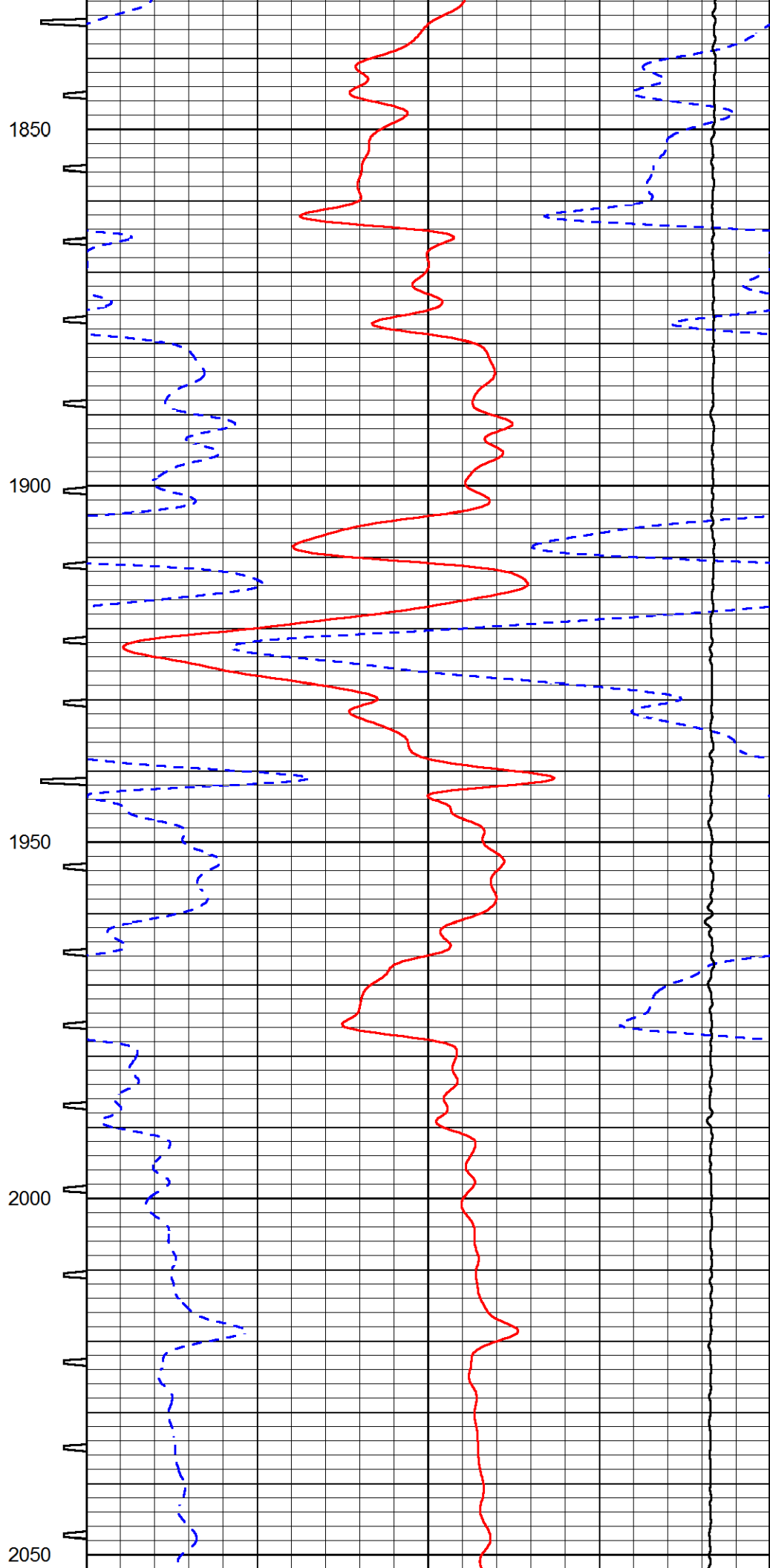
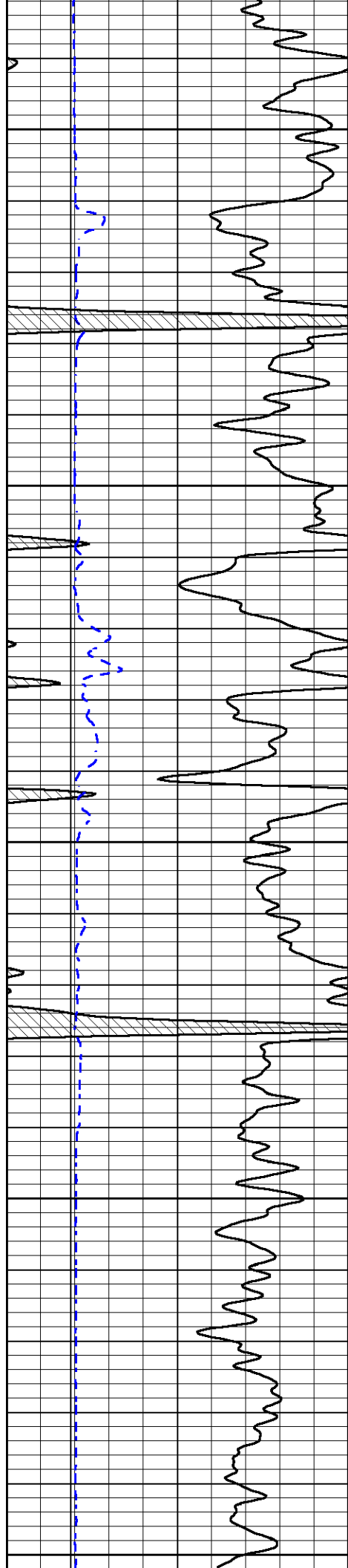


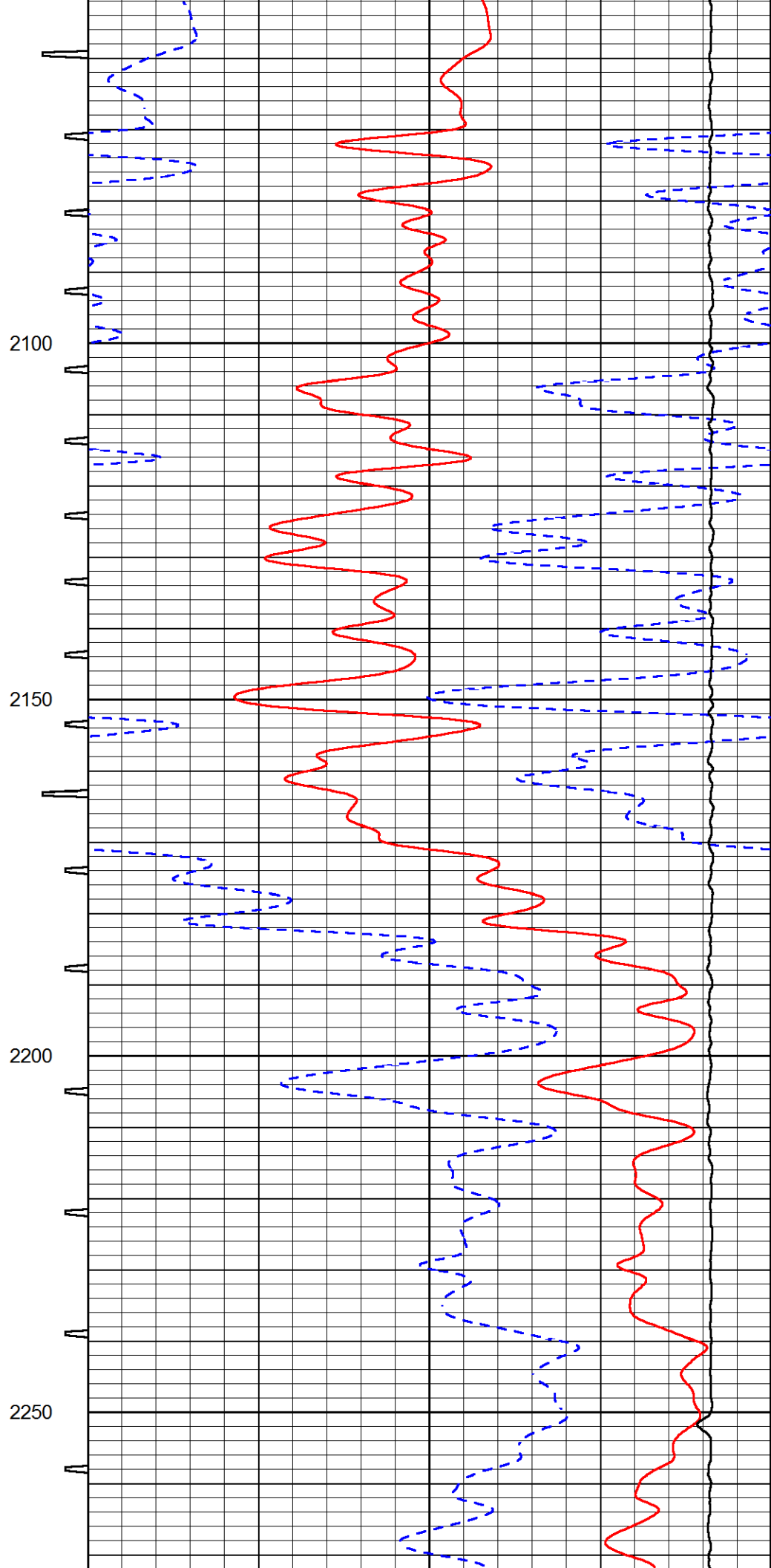
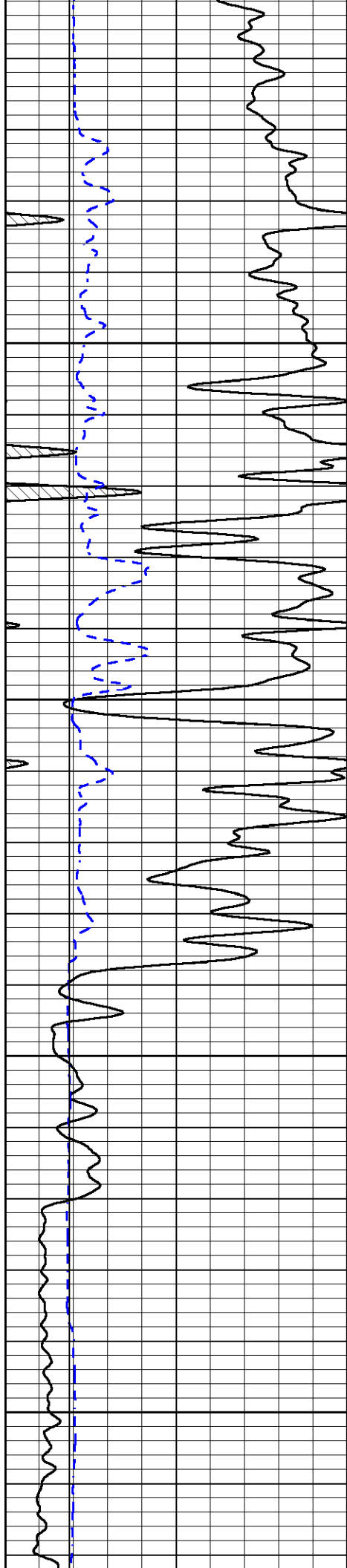
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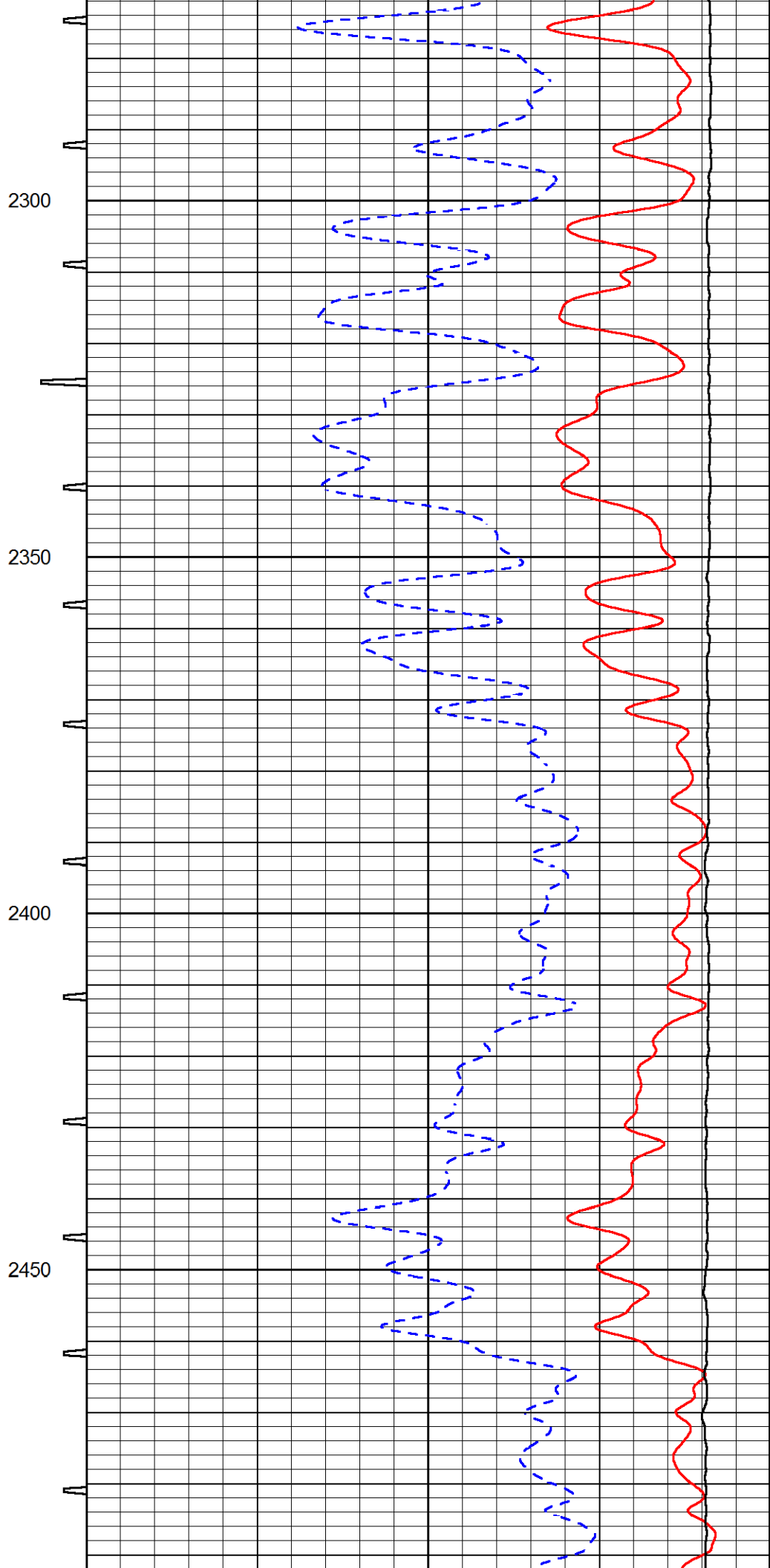
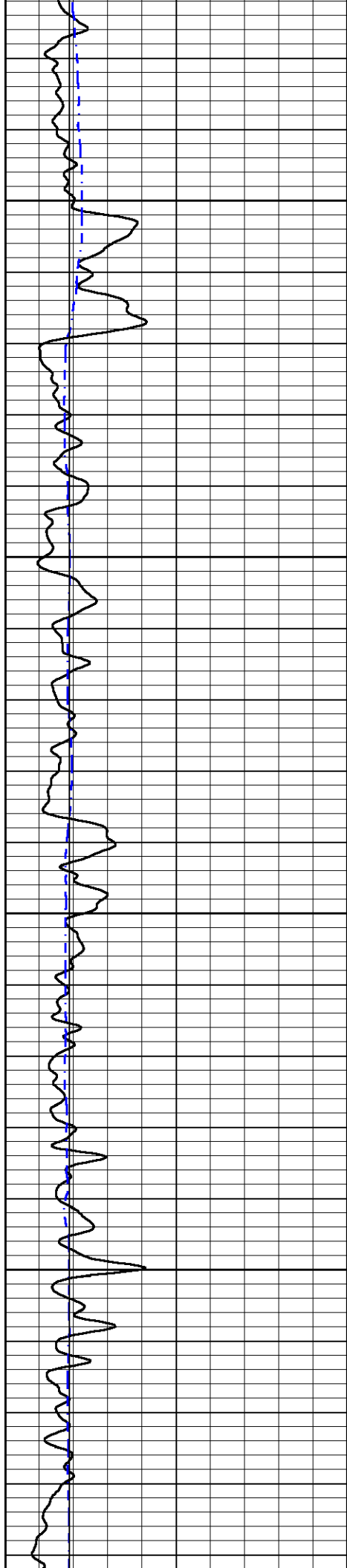
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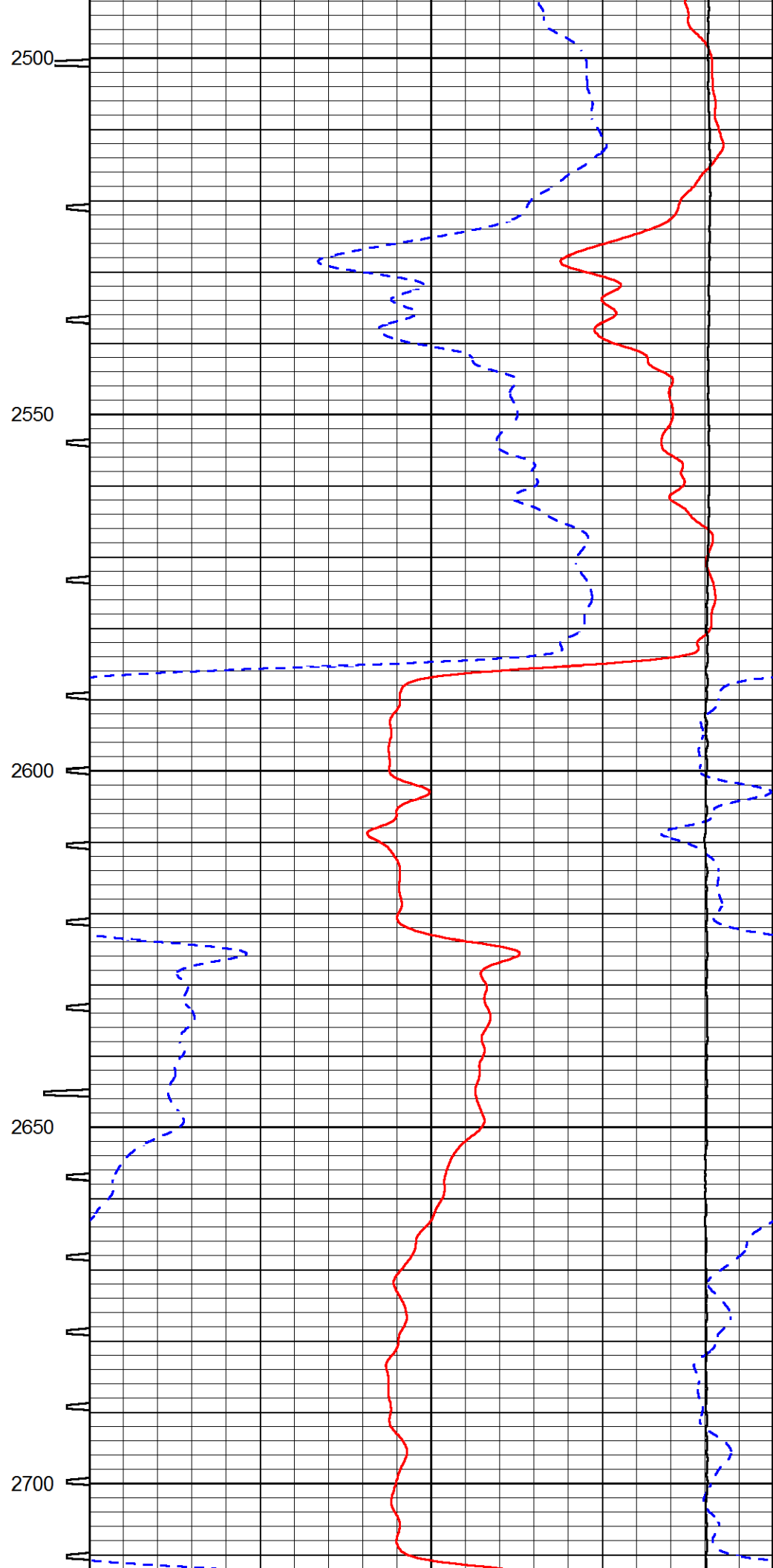
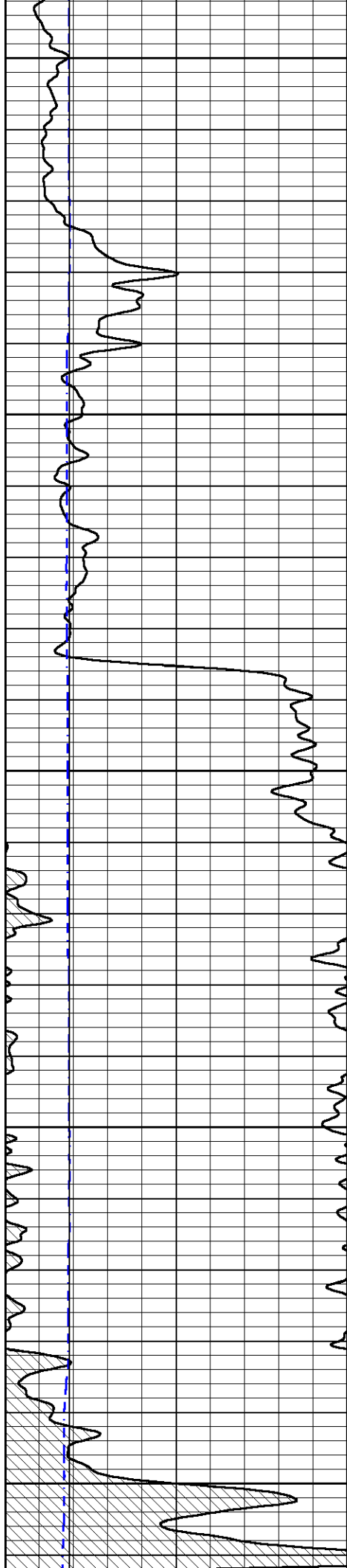
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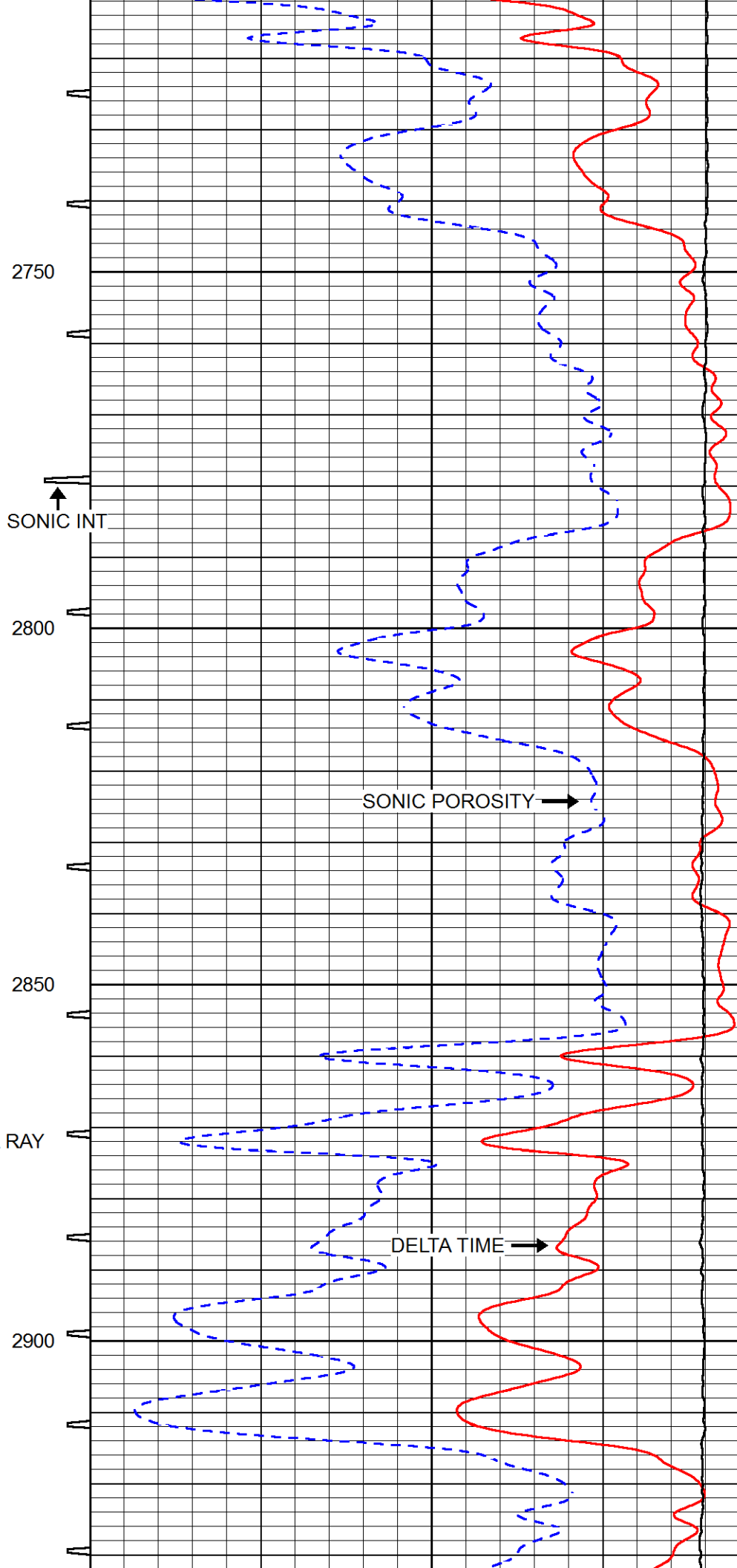
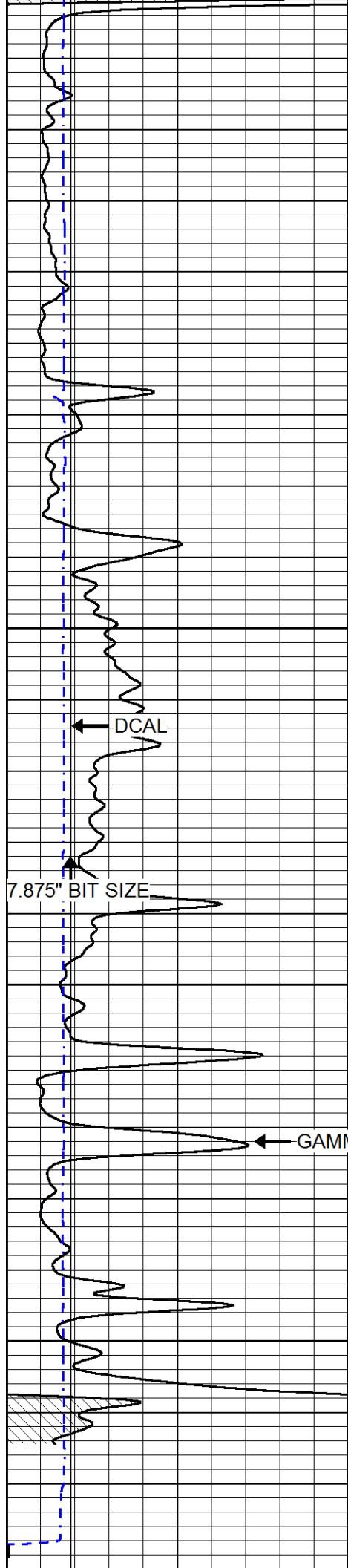
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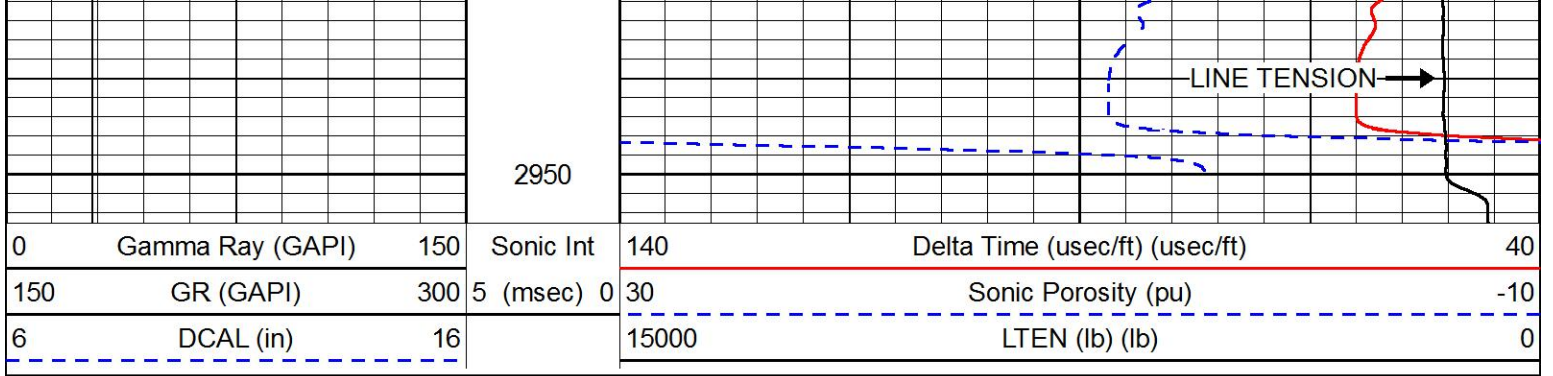






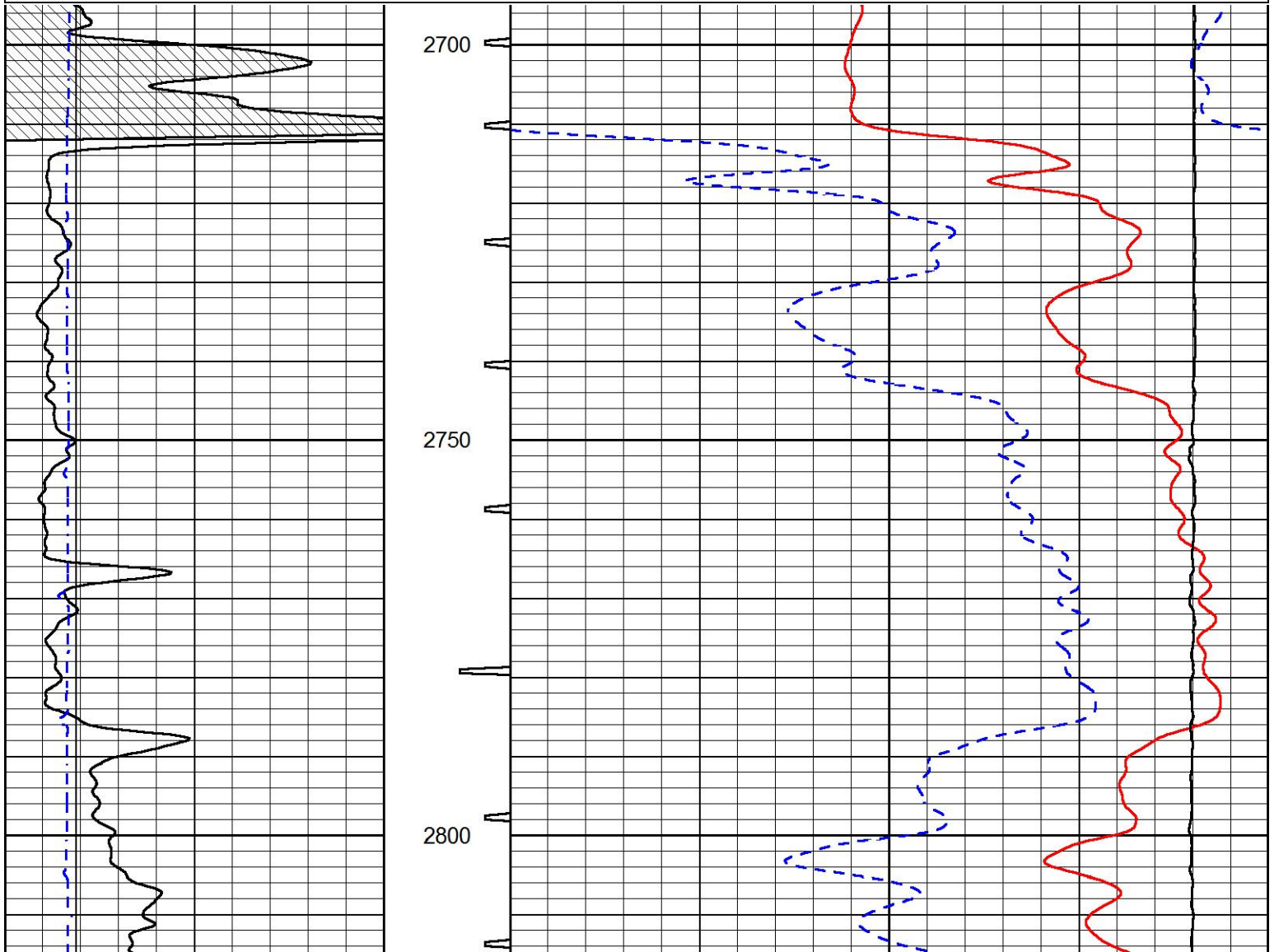
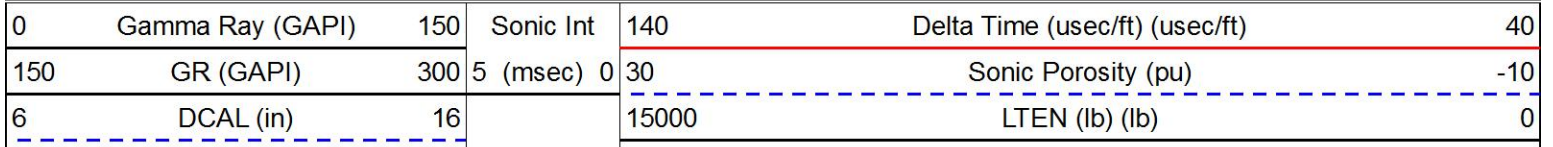


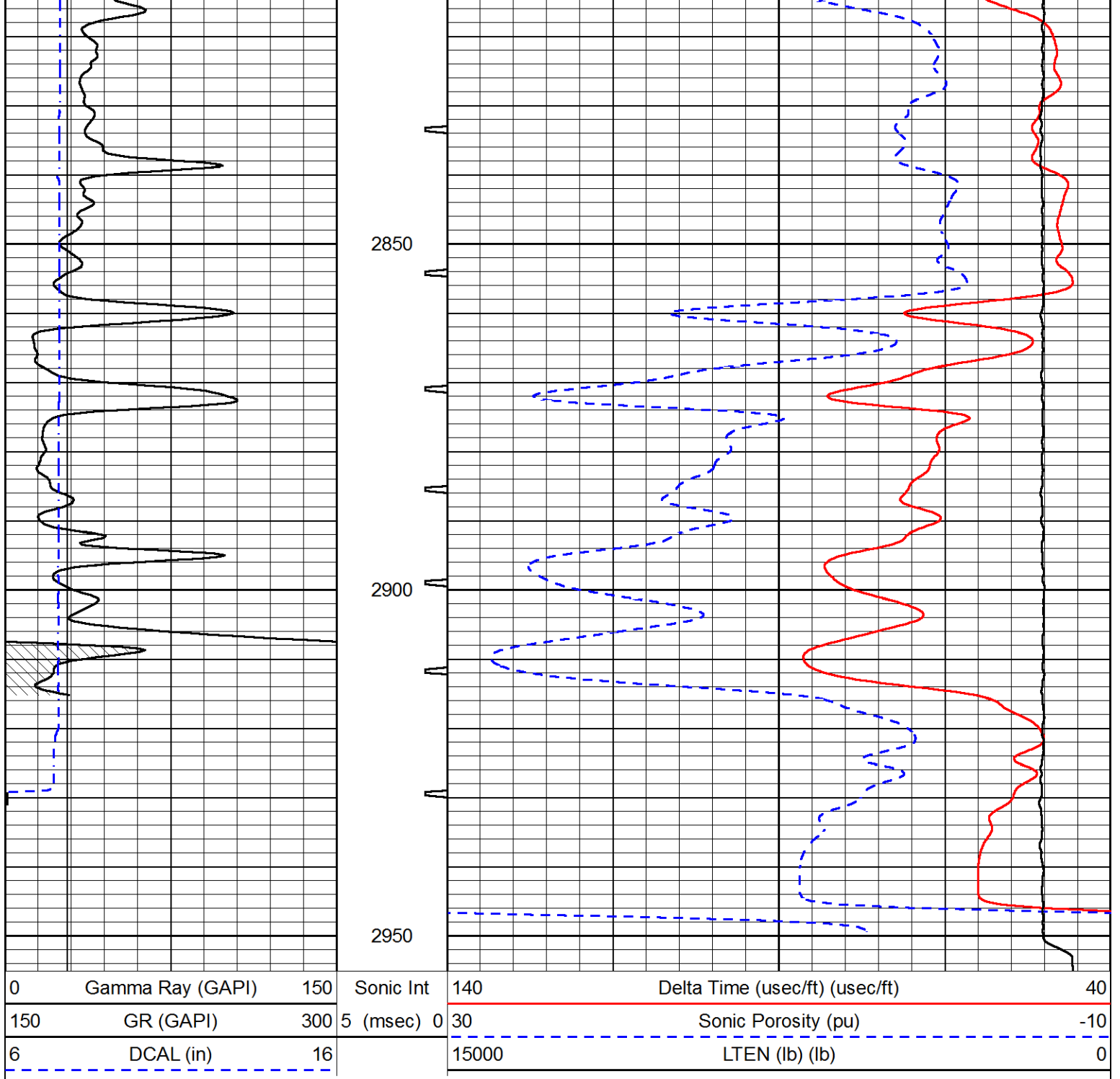




REPEAT SECTION

Database File john o farmer_denton 1.db
 Dataset Pathname STKML/pass2.1
 Presentation Format sonic
 Dataset Creation Sun May 27 23:08:00 2018
 Charted by Depth in Feet scaled 1:240





Calibration Report

Database File john o farmer_denton 1.db
 Dataset Pathname STKML/pass4.1
 Dataset Creation Sun May 27 23:34:05 2018

Dual Induction Calibration Report

Serial-Model: PSI 971 HT-PSI HIGH TEMP
 Calibration Performed: Sun May 27 00:33:10 2018

Loop:	Readings		References		Results		
	Air	Loop	Air	Loop	Gain	Offset	
Deep	167.000	835.000	0.000	255.800	mmho/m	0.430	-30.000
Medium	0.000	1348.000	142.000	255.800	mmho/m	0.375	-30.000

Microlog Calibration Report

Serial-Model: PSI-01-PSIML
 Performed: Sun May 27 00:33:27 2018

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	8500.0000	-0.3000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	11000.0000	-0.6000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-65.8250

Compensated Density Calibration Report

Serial-Model: 817-947-M&W
 Source / Verifier: 16955B / 2ci
 Master Calibration Performed: Tue May 01 14:00:17 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	6127.15	5922.31	cps
Aluminum	2.660	g/cc	1141.85	3762.09	cps
Spine Angle = 74.89		Density/Spine Ratio = 0.520			
	Size		Reading		
Small Ring	4.50	in	1.02		
Large Ring	15.00	in	1.15		

Compensated Neutron Calibration Report

Serial Number: 207-MW
 Tool Model: M&W
 Calibration Performed: MON APR 16 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 JOHN O. FARMER, INC.
 Well DENTON #1

PIONEER

Pioneer Energy Services

Field	HAGINS
County	LYON
State	KANSAS