



PIONEER

Pioneer Energy Services

DUAL COMP POROSITY LOG

Company LARSON ENGINEERING, INC.
Well GLAVES #2
Field ENICE NORTHEAST
County NESS
State KANSAS

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Location: API #: 15-135-26001-00-00

Other Services

SEC 11 TWP 16S RGE 26W
2310' FSL & 894' FWL

DIL/MEL

Permanent Datum GROUND LEVEL Elevation 2610'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2620'
D.F. N/A
G.L. 2610'

Date 5/7/2018

Run Number ONE

Type Log CNL/CDL

Depth Driller 4624'

Depth Logger 4629'

Bottom Logged Interval 4600'

Top Logged Interval 3600'

Type Fluid In Hole CHEMICAL

Salinity, PPM CL 2800

Density 9.0

Level FULL

Max. Rec. Temp. F 122

Operating Rig Time 3 HOURS

Equipment -- Location 91 HAYS

Recorded By IAN MABB

Witnessed By VERN SCHRAG

Borehole Record

Casing Record

Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0'	369'	8.625"	23#	0'	369'
TWO	7.875"	369"	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.

UTICA, KS.

FROM INTERSECTION OF HWY 4 & D ROAD, NORTH 2 1/2 MILES, EAST INTO

Log Measured From: KELLY BUSHING 10 Ft. Above Permanent Datum

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

Your Pioneer Energy Services Crew

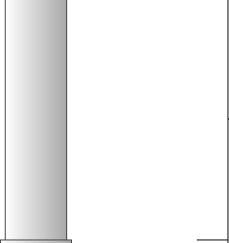
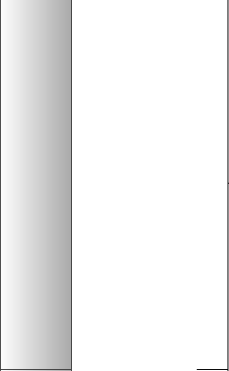
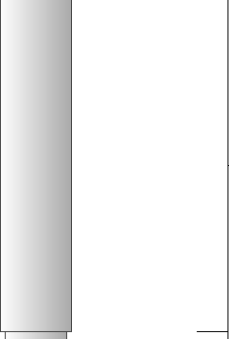
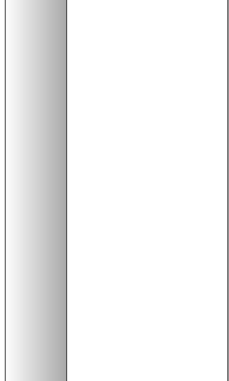
Engineer: IAN MABB
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: VERN SCHRAG
Secondary Witness:
Secondary Witness:
Secondary Witness:

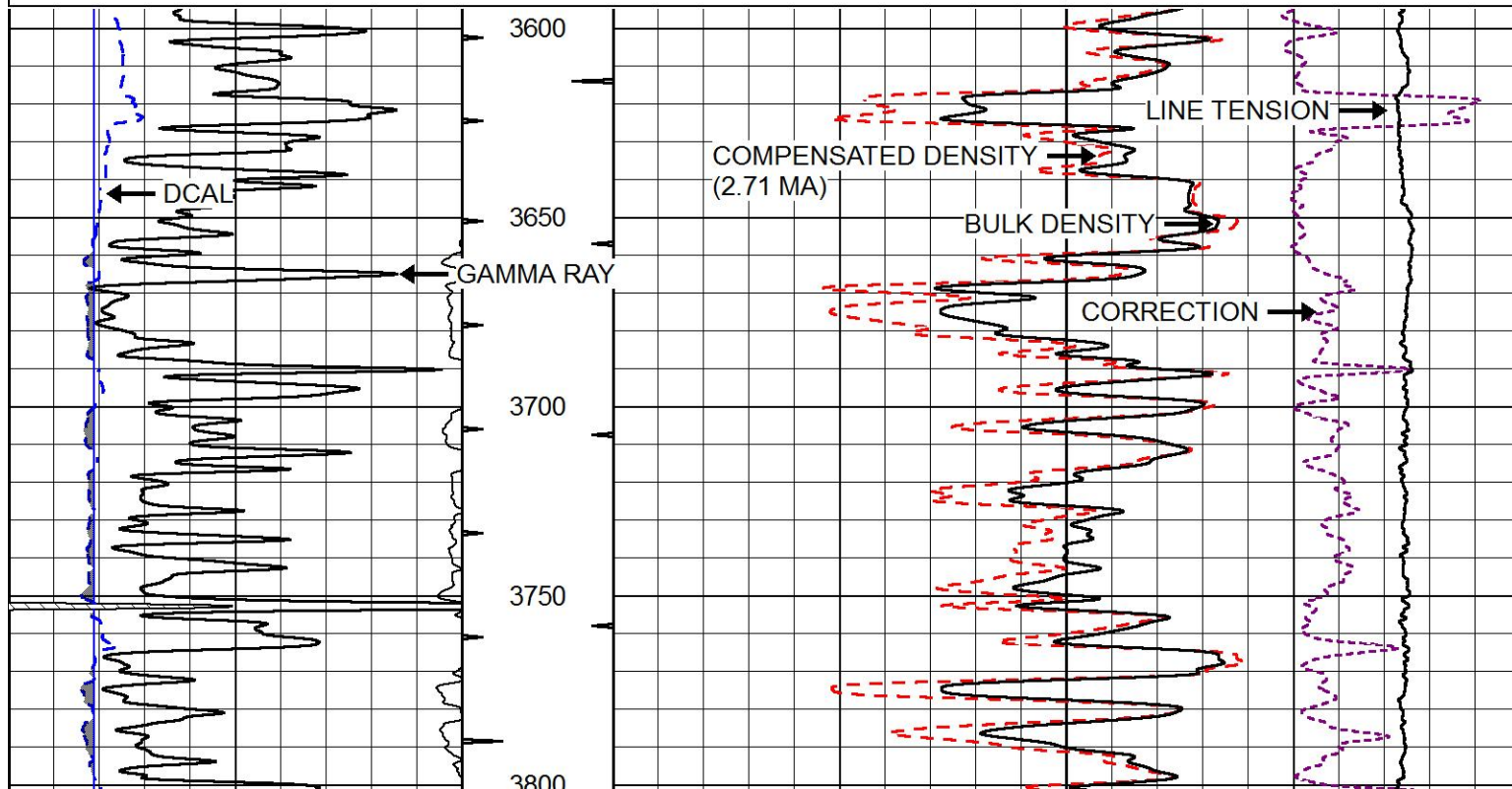
Top - Bottom

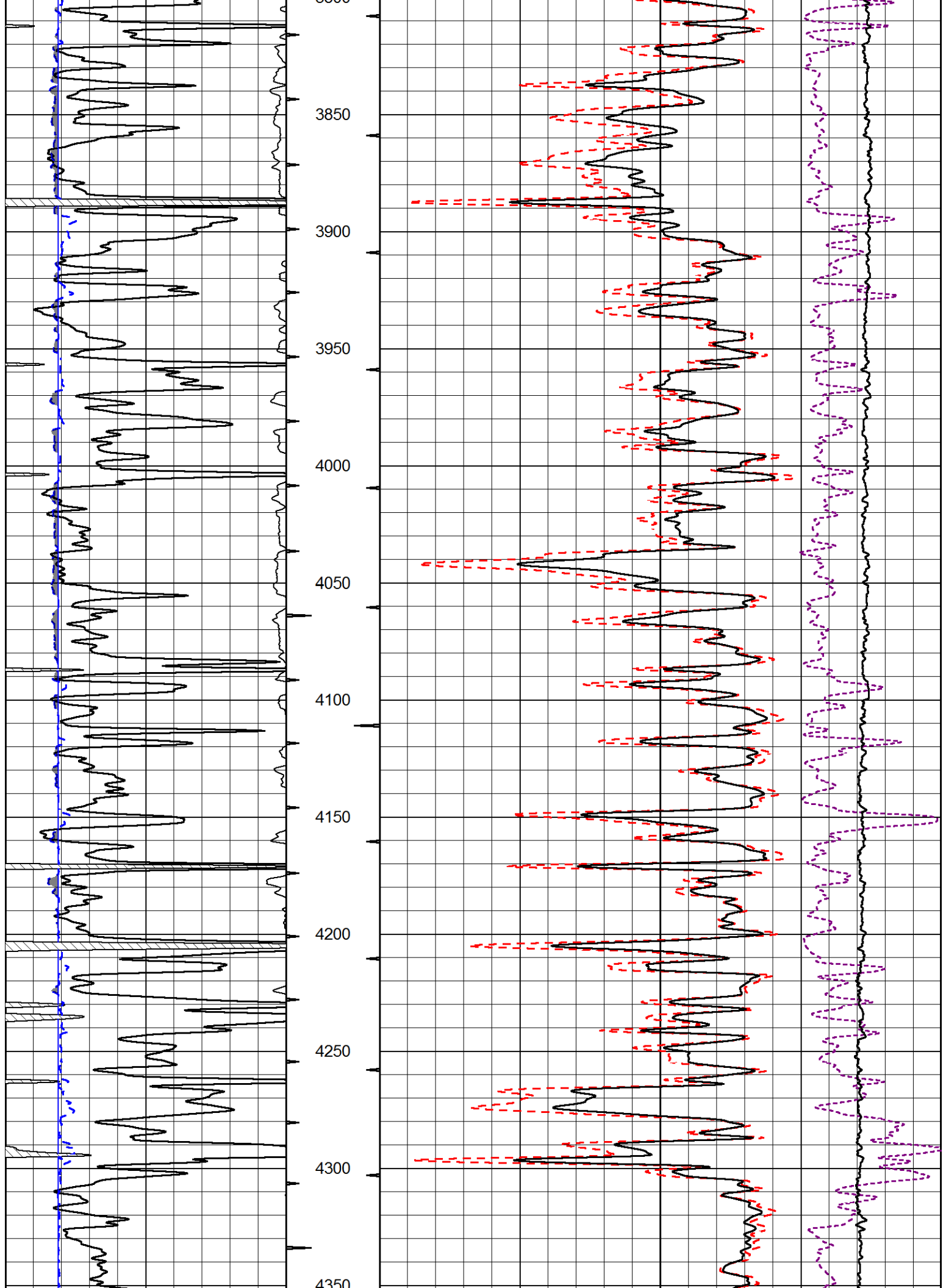
M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	-45	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	0	0	5.5	0	0	100	7.875

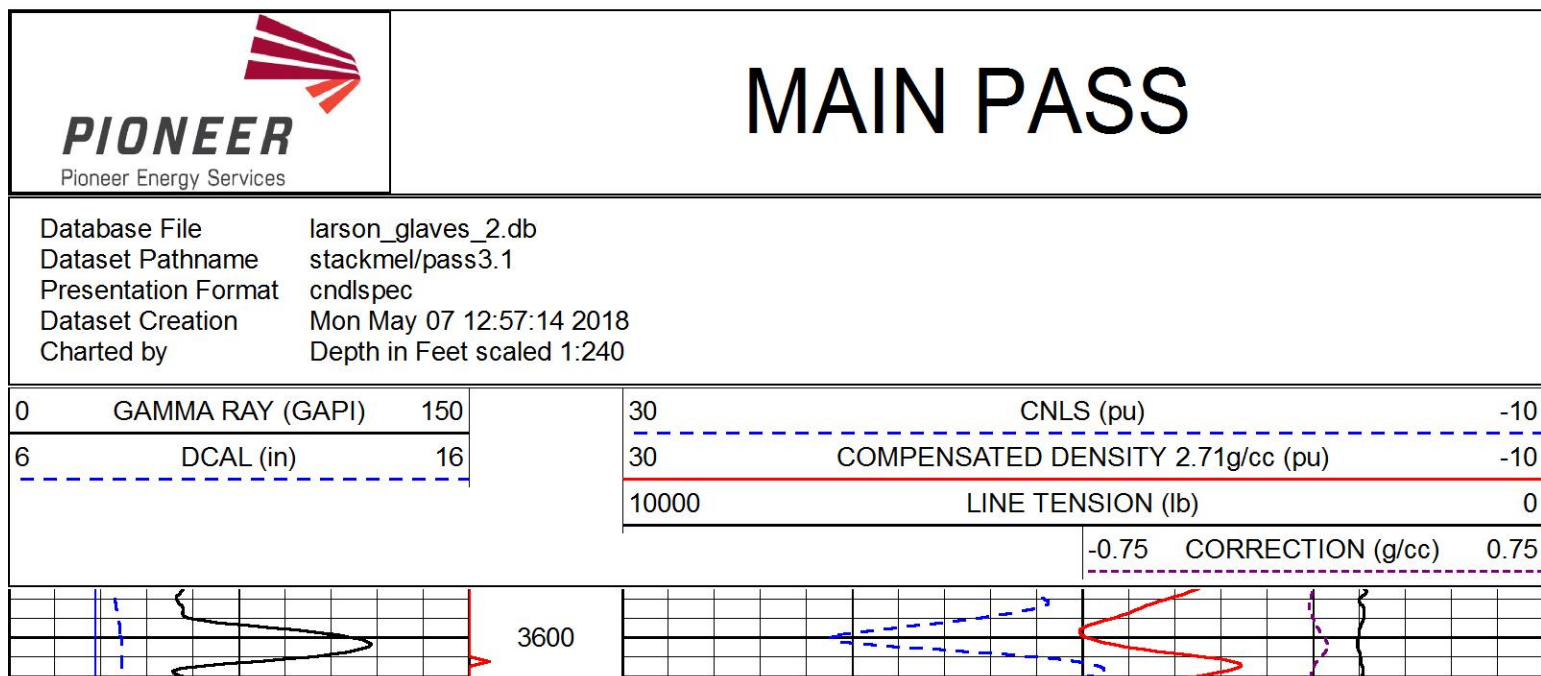
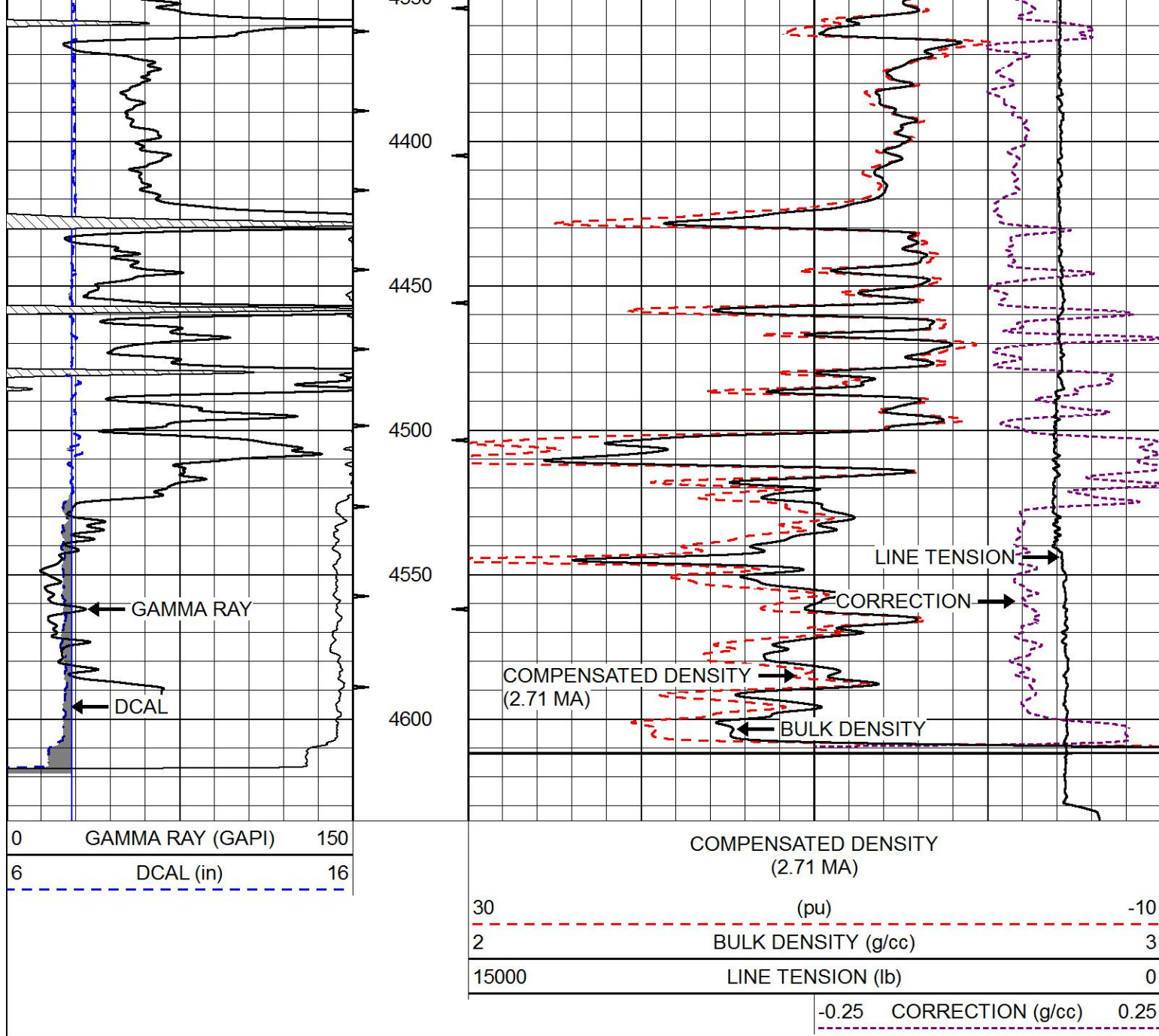
Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (207-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (227-771)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSIML (PSI-01) GO Micro log tools converted to Simplec electronics	7.58	4.00	65.00
RLL3F RLL3	15.80 15.80					

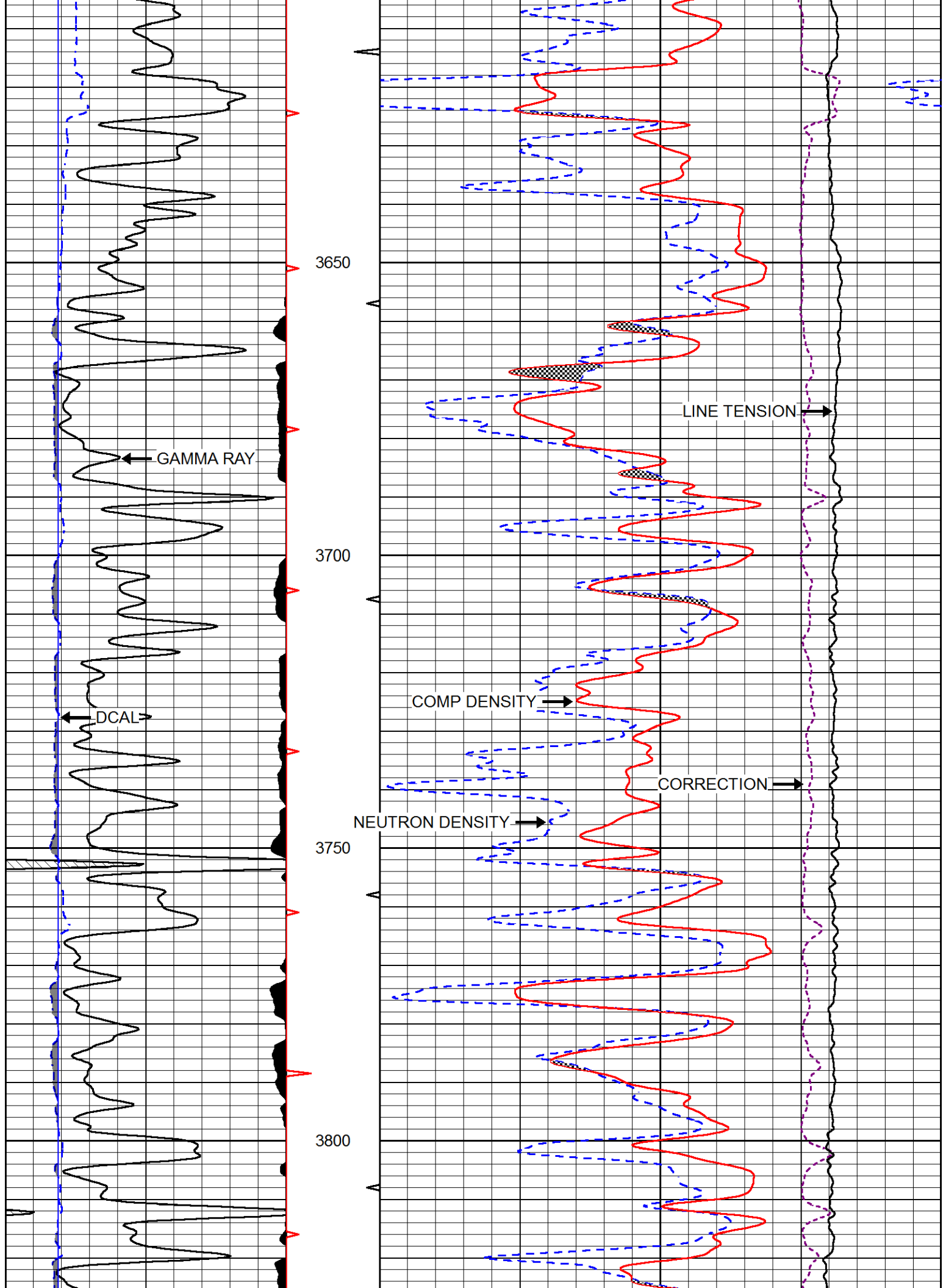
		DIL-PSI HIGH TEMP (933 (HT))		18.50	3.50	220.00
CILD	8.00					
CILM	4.70					
SP	0.20					
Dataset: laron_glaves_2.db: field/well/stackmel/pass3.1 Total length: 43.08 ft Total weight: 685.00 lb O.D.: 4.00 in						

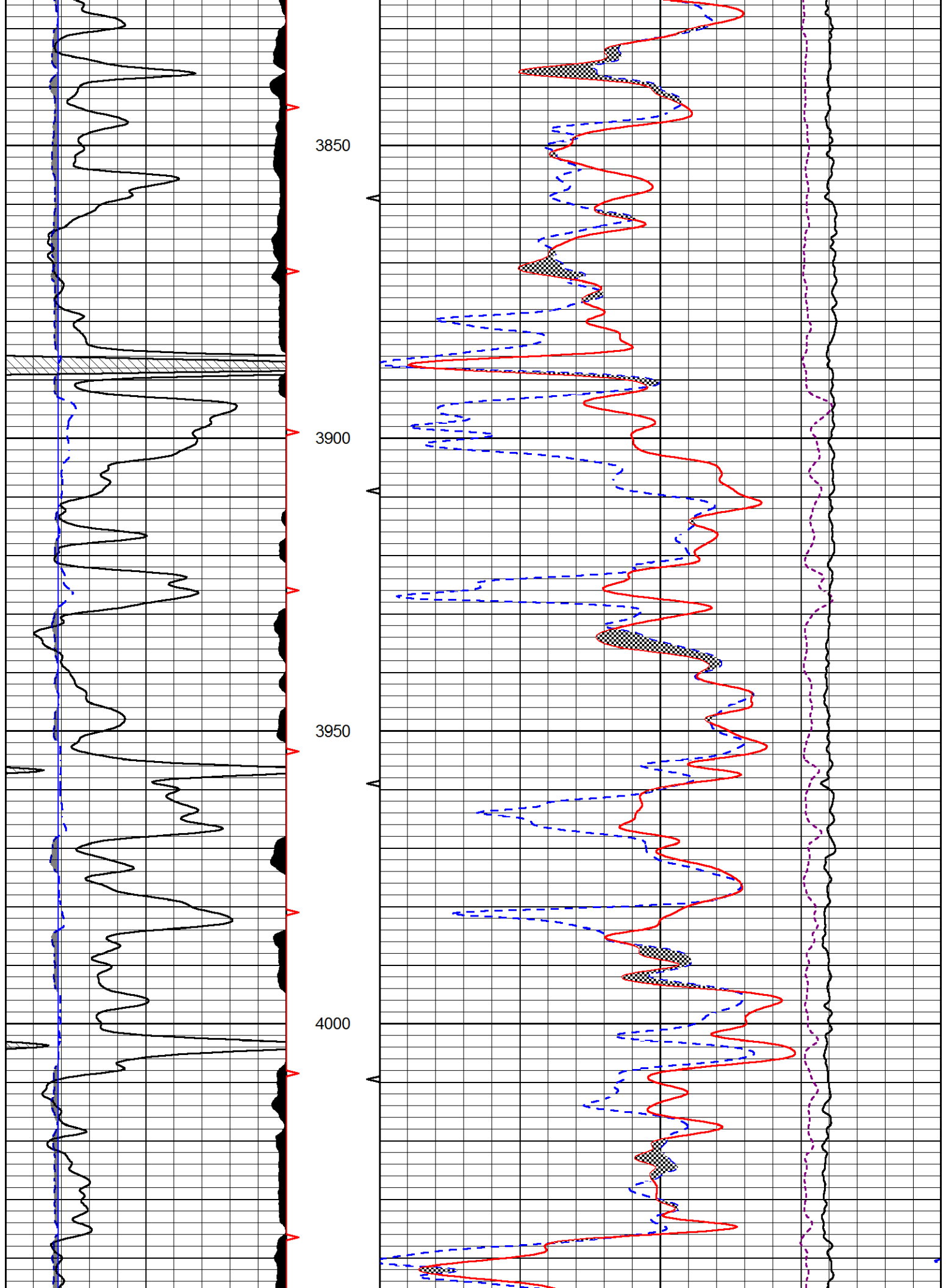
		MAIN PASS				
Database File laron_glaves_2.db Dataset Pathname stackmel/pass3.1 Presentation Format cdl Dataset Creation Mon May 07 12:57:14 2018 Charted by Depth in Feet scaled 1:600						
0	GAMMA RAY (GAPI)	150	COMPENSATED DENSITY (2.71 MA)			
6	DCAL (in)	16	30 (pu) -10 2 BULK DENSITY (g/cc) 3 15000 LINE TENSION (lb) 0 -0.25 CORRECTION (g/cc) 0.25			

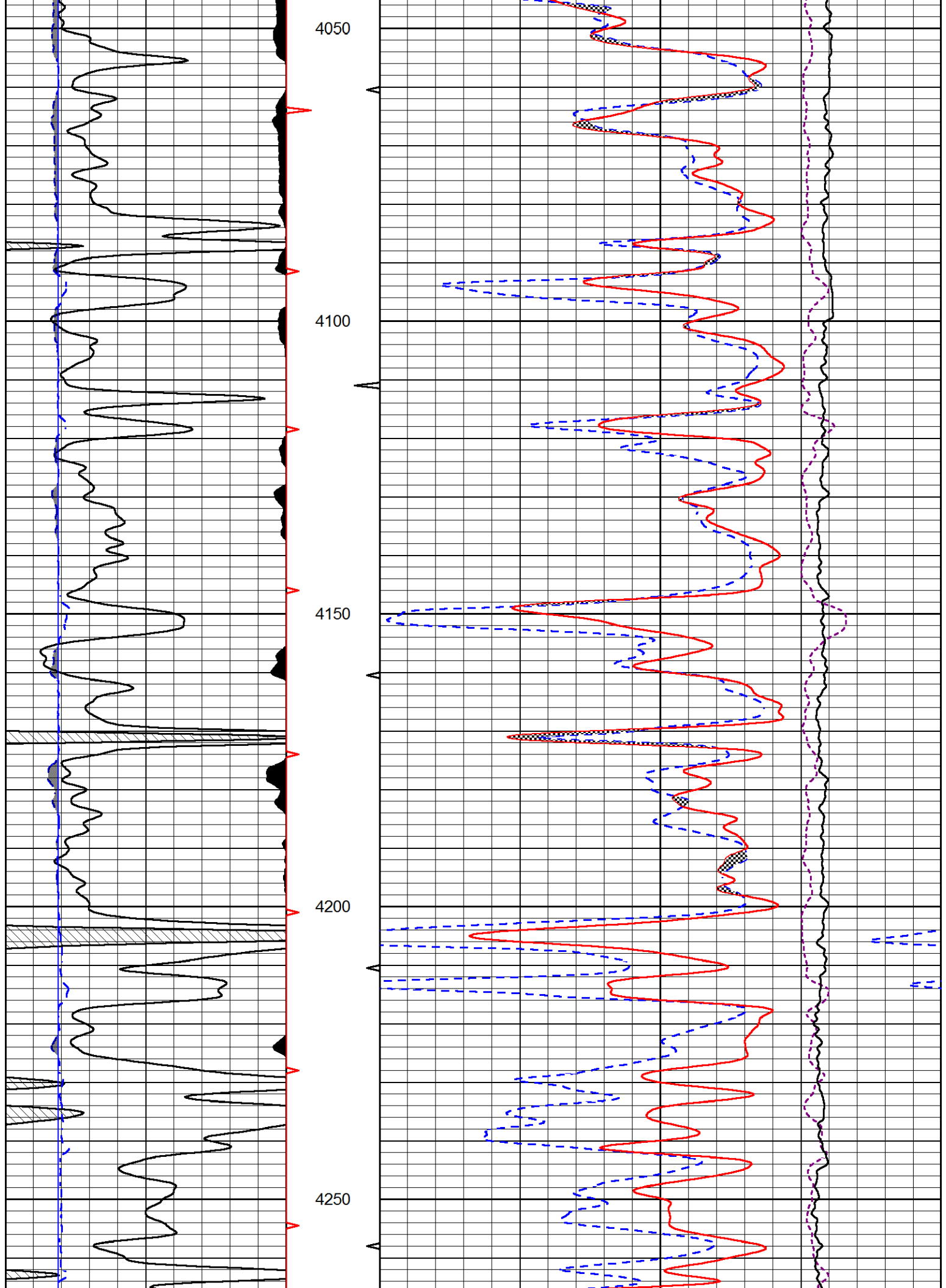


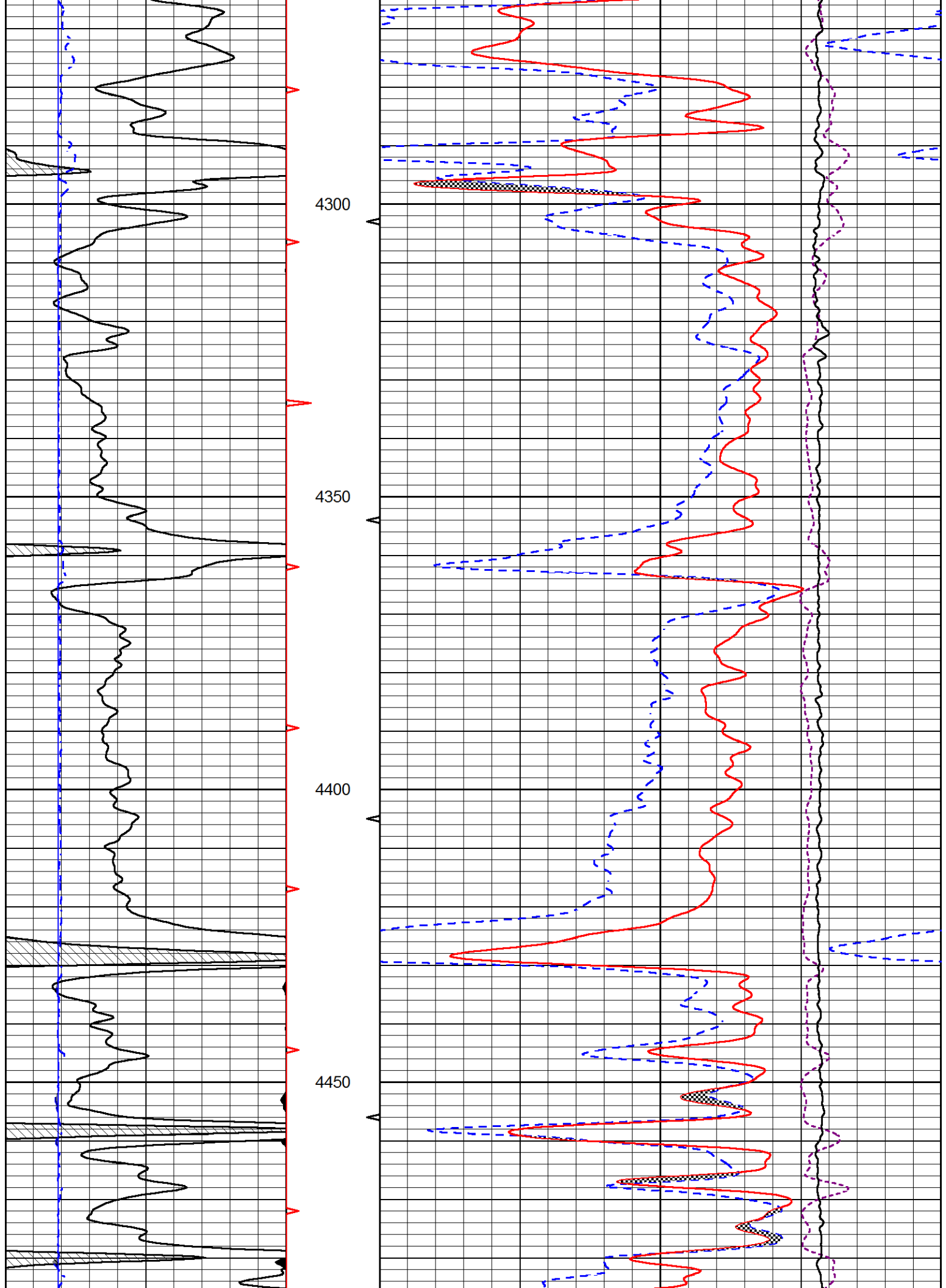


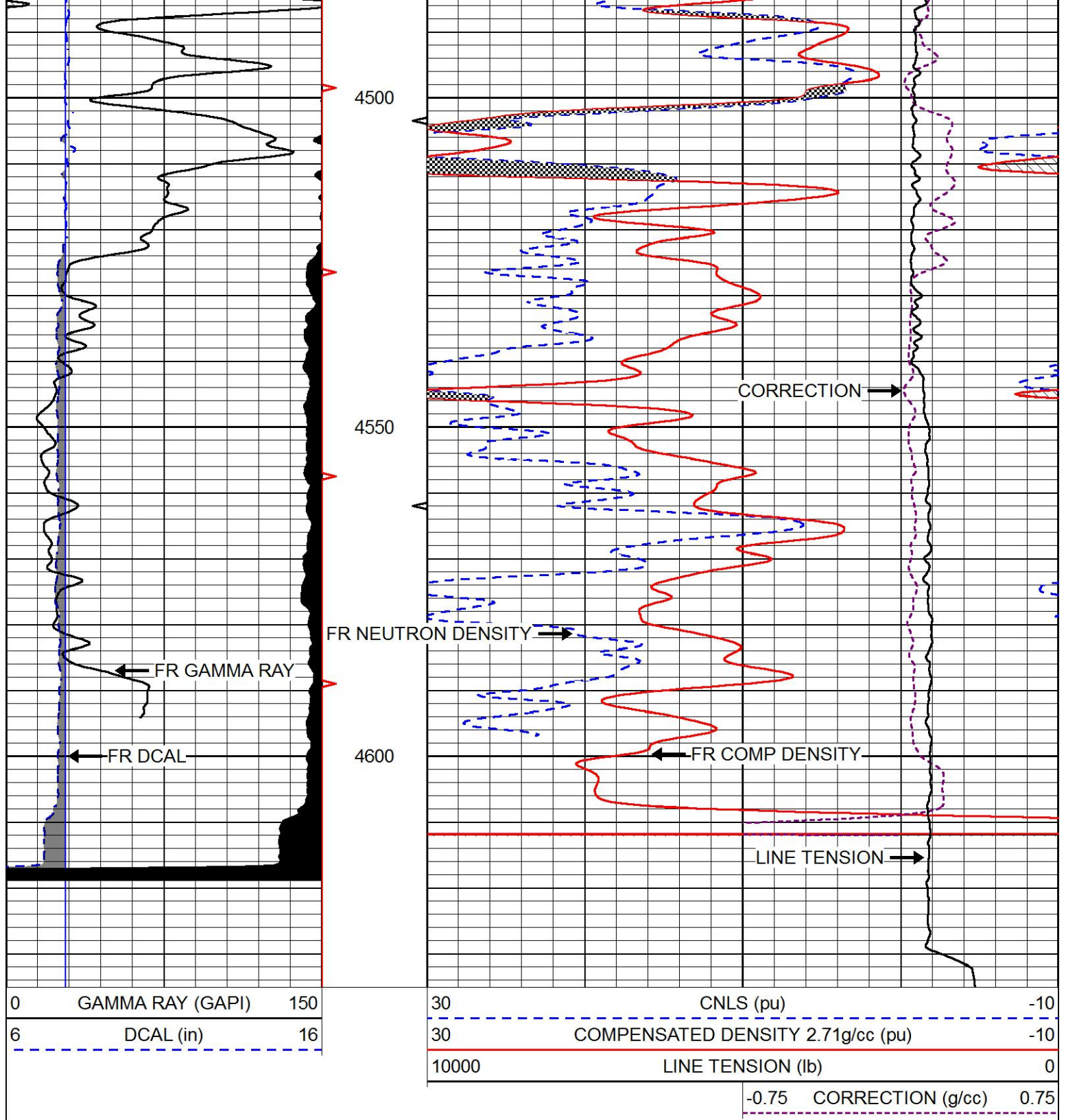










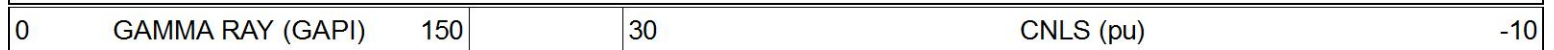


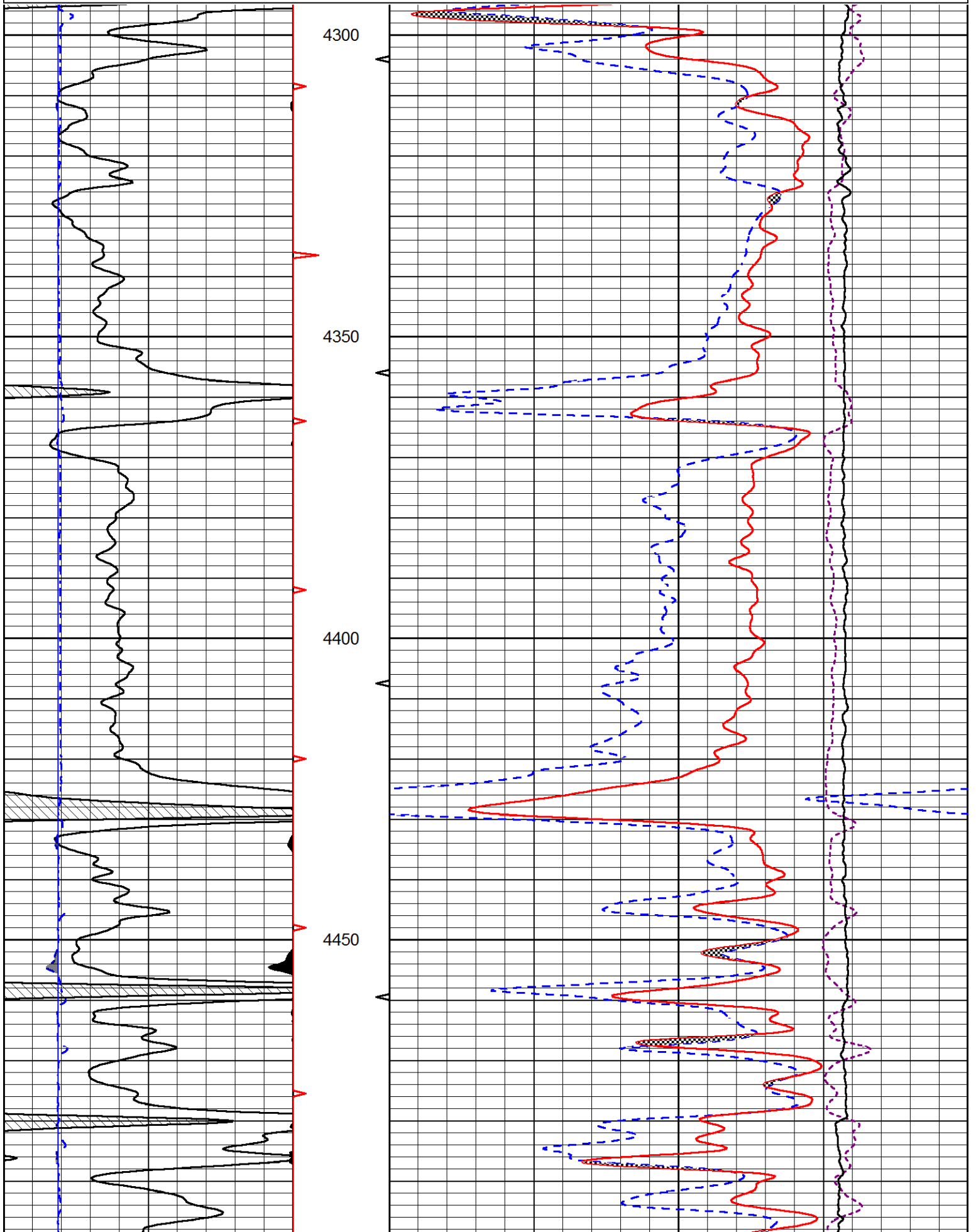


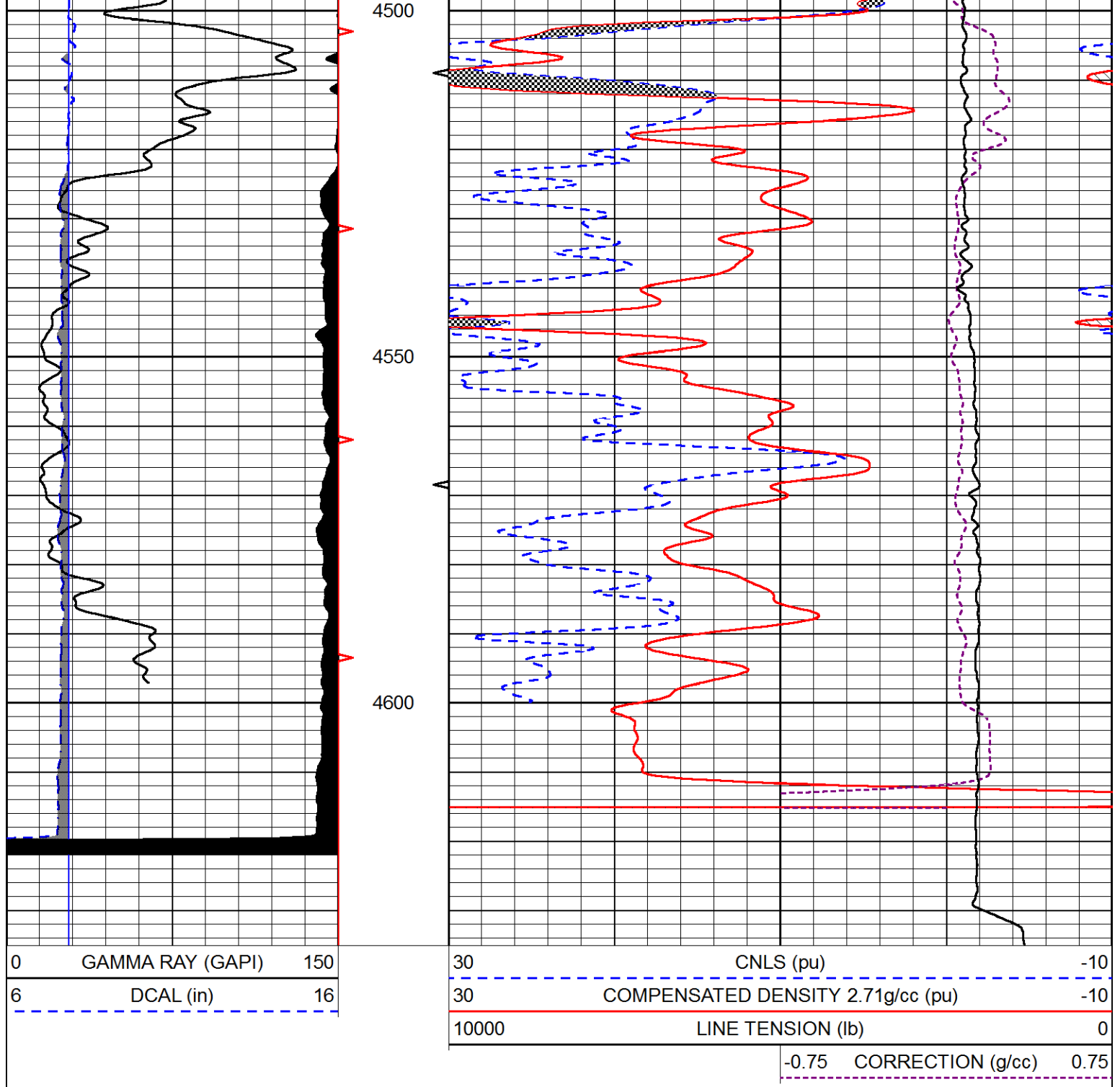
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REPEAT SECTION

Database File	larson_glaves_2.db
Dataset Pathname	stackmel/pass2.1
Presentation Format	cnlspec
Dataset Creation	Mon May 07 12:32:22 2018
Charted by	Depth in Feet scaled 1:240







Calibration Report

Database File: laron_glaves_2.db
 Dataset Pathname: stackmel/pass3.1
 Dataset Creation: Mon May 07 12:57:14 2018

Dual Induction Calibration Report

Serial-Model: 933 (HT)-PSI HIGH TEMP
 Calibration Performed: Mon Apr 23 14:01:41 2018

Readings

References

Results

Loop:	Air	Loop	Air	Loop	mmho/m	Gain	Offset
Deep	167.000	835.000	0.000	255.000	mmho/m	0.700	-17.000
Medium	142.000	1349.000	0.000	255.000	mmho/m	0.565	-60.500

Microlog Calibration Report							
Serial-Model: Performed:				PSI-01-PSIML Mon Apr 16 11:11:21 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: Source / Verifier: Master Calibration Performed:				227-771-M&W 16955B / 2ci Fri Mar 09 21:14:39 2018			

Master Calibration					
	Density		Far Detector	Near Detector	
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: Tool Model: Calibration Performed:				207-MW M&W 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: Tool Model: Calibration Performed:				89 M&W 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	LARSON ENGINEERING, INC.
		Well	GLAVES #2

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Field
County
State

ENICE NORTHEAST
NESS
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