



PIONEER

Pioneer Energy Services NC.

DUAL COMP POROSITY LOG

Company PICKRELL DRILLING COMPANY, INC.
Well DUFF A #1
Field NONE
County LOGAN
State KANSAS

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Field NONE
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Location: API #: 15-109-21537-00-00
1683' FNL & 2233' FWL
SEC 9 TWP 15S RGE 32W
Permanent Datum GROUND LEVEL Elevation 2672'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING
Other Services
DIL/MEL
K.B. 2679'
D.F. N/A
G.L. 2672'

Date 3/8/2018

Run Number	ONE
Type Log	CNL/CDL
Depth Driller	4380'
Depth Logger	4382'
Bottom Logged Interval	4353'
Top Logged Interval	3200'
Type Fluid In Hole	CHEMICAL
Salinity, PPM CL	4000
Density	9.4
Level	FULL
Max. Rec. Temp. F	120
Operating Rig Time	3 HOURS
Equipment -- Location	91 HAYS
Recorded By	D. SCHMIDT
Witnessed By	AARON YOUNG

Borehole Record

Casing Record

Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0'	221'	8.625"	23#	0'	221'
TWO	7.875"	221'	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.

OAKLEY,
24 SOUTH ON HWY 83 TO GOLD RD, 1 SOUTH,
2 WEST TO LOCATION

Log Measured From: KELLY BUSHING 7 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: AARON YOUNG
Secondary Witness:
Secondary Witness:
Secondary Witness:

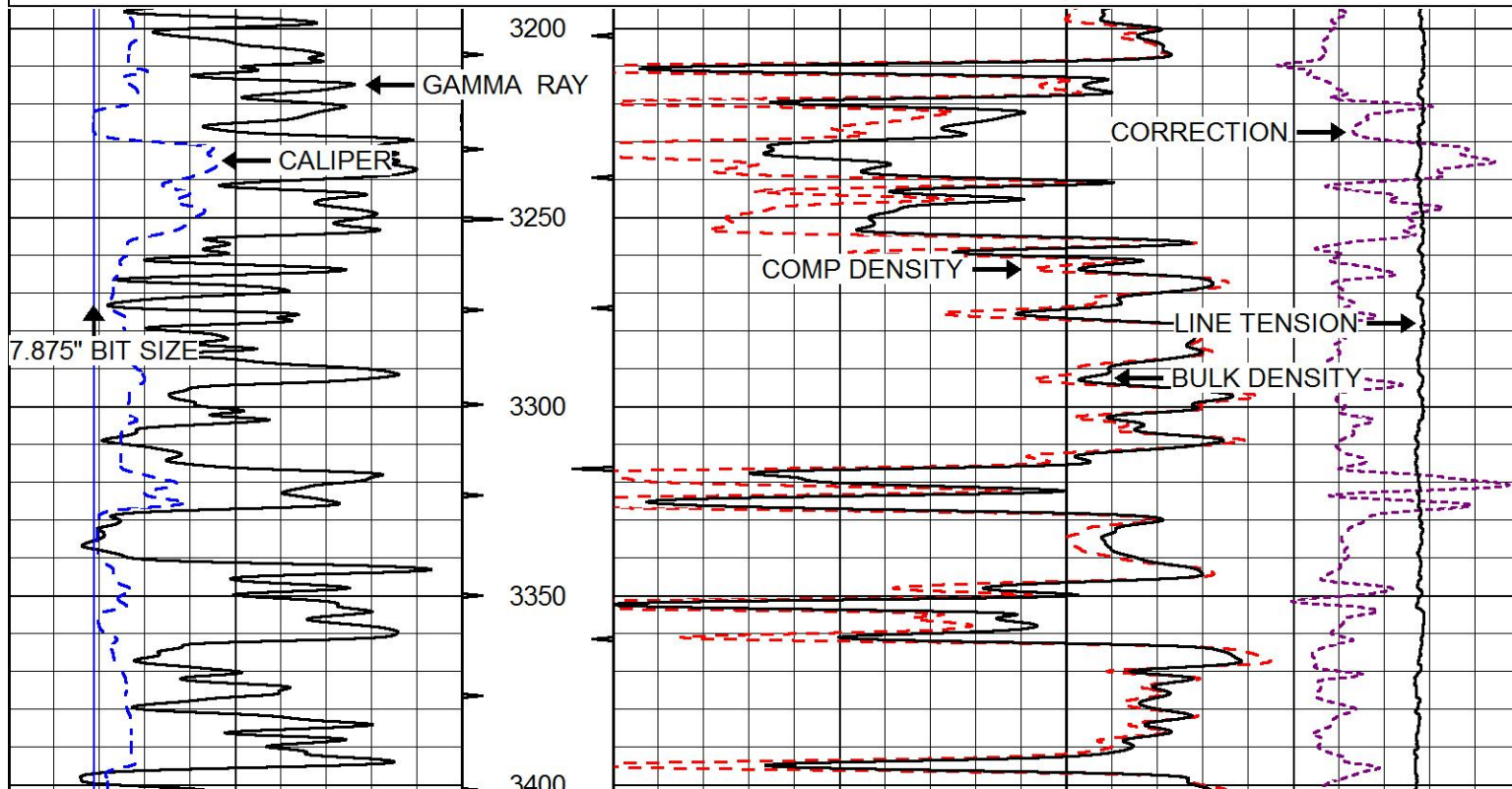
Top - Bottom

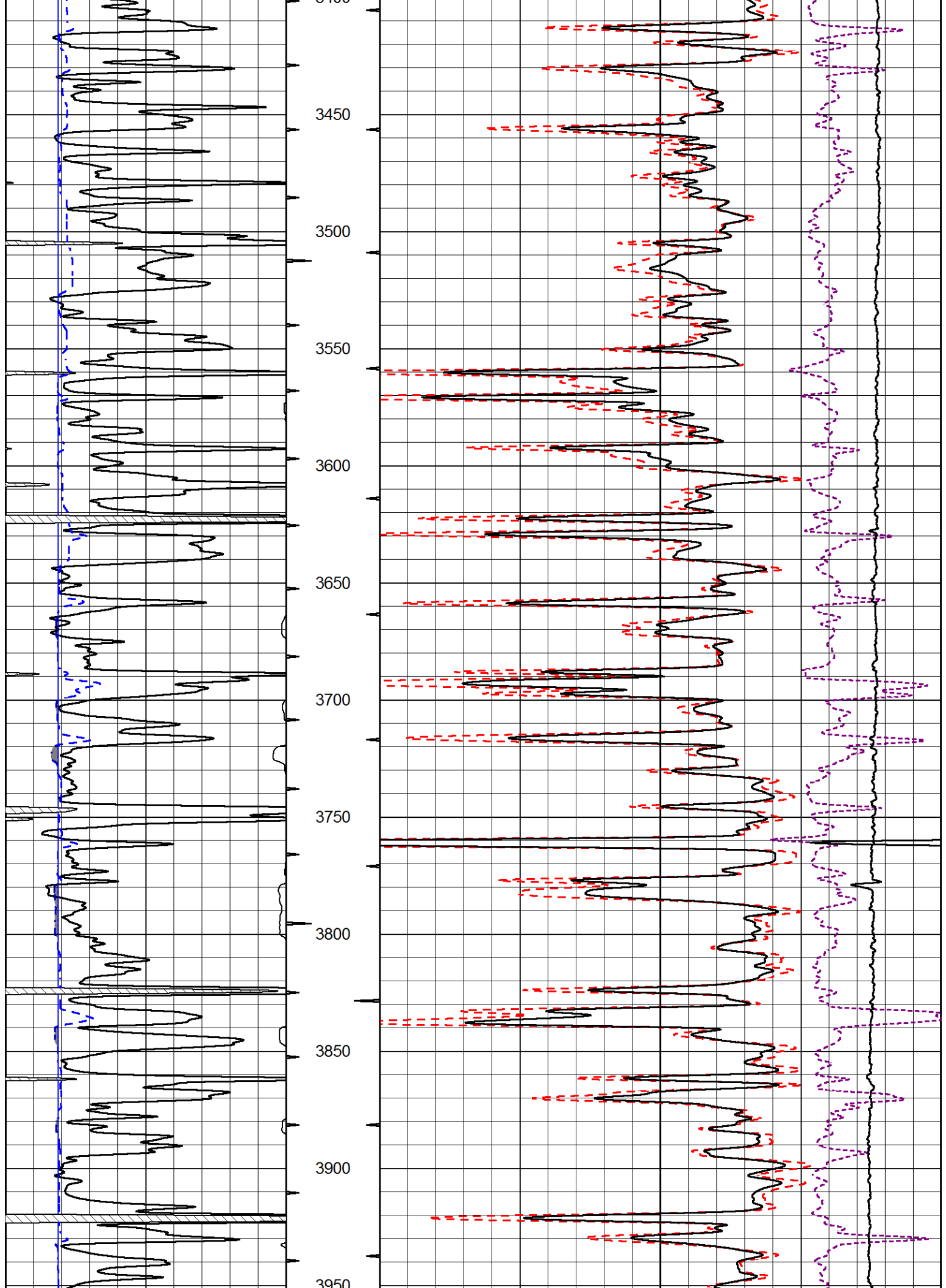
A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 120	in 5.5	in 0	g/cc 1	2	g/cc 2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m 0	mmho/m 0	mV -130	degF 20	Off	ft 4382

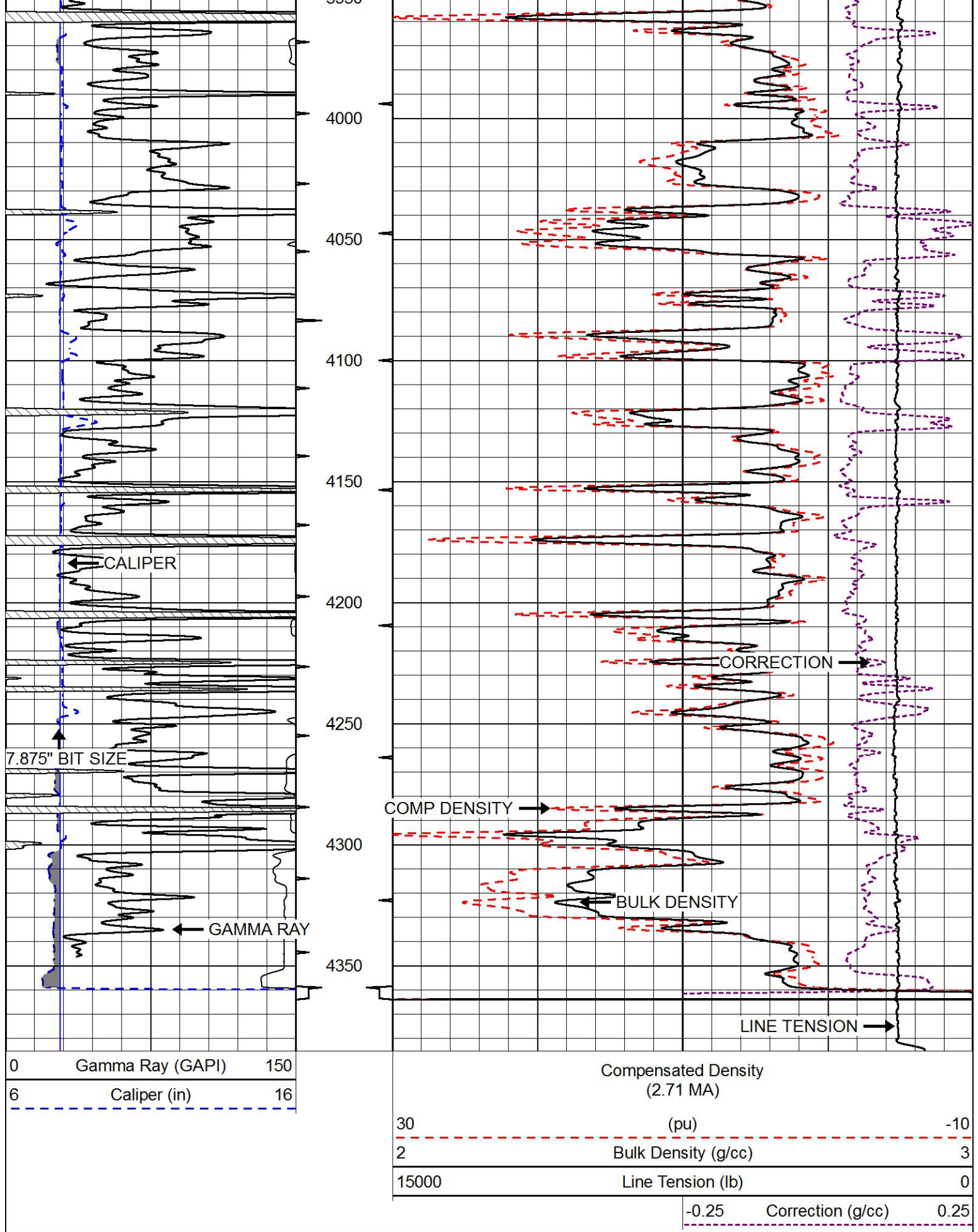
Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (207-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (182-152)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSIML (PSI-01) GO Micro log tools 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: pickrell_duff a 1.db: field/well/STKML/pass3.1 Total length: 43.08 ft Total weight: 685.00 lb O.D.: 4.00 in							

 PIONEER Pioneer Energy Services		MAIN PASS	
Database File		pickrell_duff a 1.db	
Dataset Pathname		STKML/pass3.1	
Presentation Format		cdl	
Dataset Creation		Thu Mar 08 06:03:43 2018	
Charted by		Depth in Feet scaled 1:600	
0	Gamma Ray (GAPI)	150	
6	Caliper (in)	16	
		Compensated Density (2.71 MA)	
		30	(pu)
		2	Bulk Density (g/cc)
		15000	Line Tension (lb)
		-0.25	Correction (g/cc)





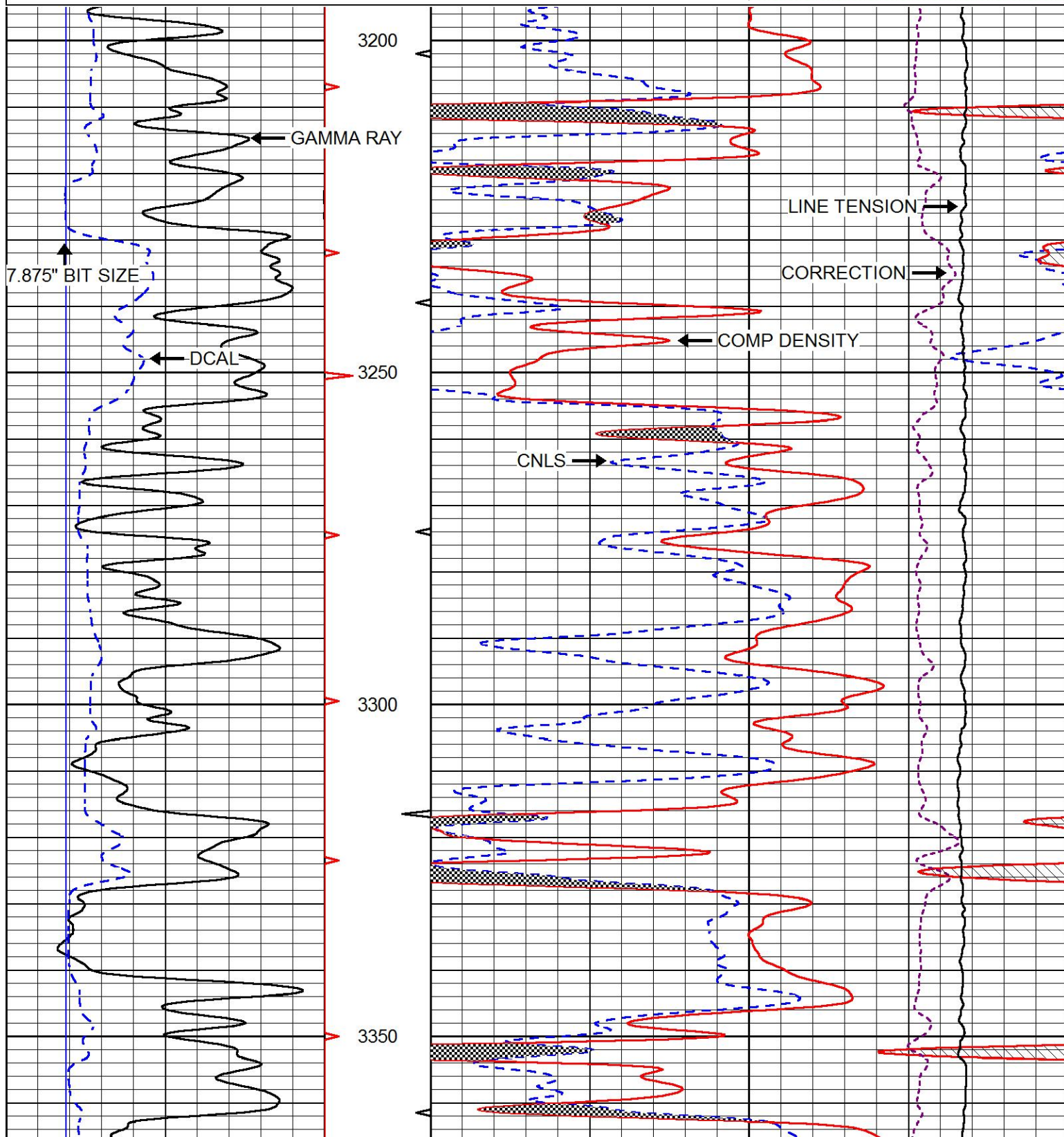


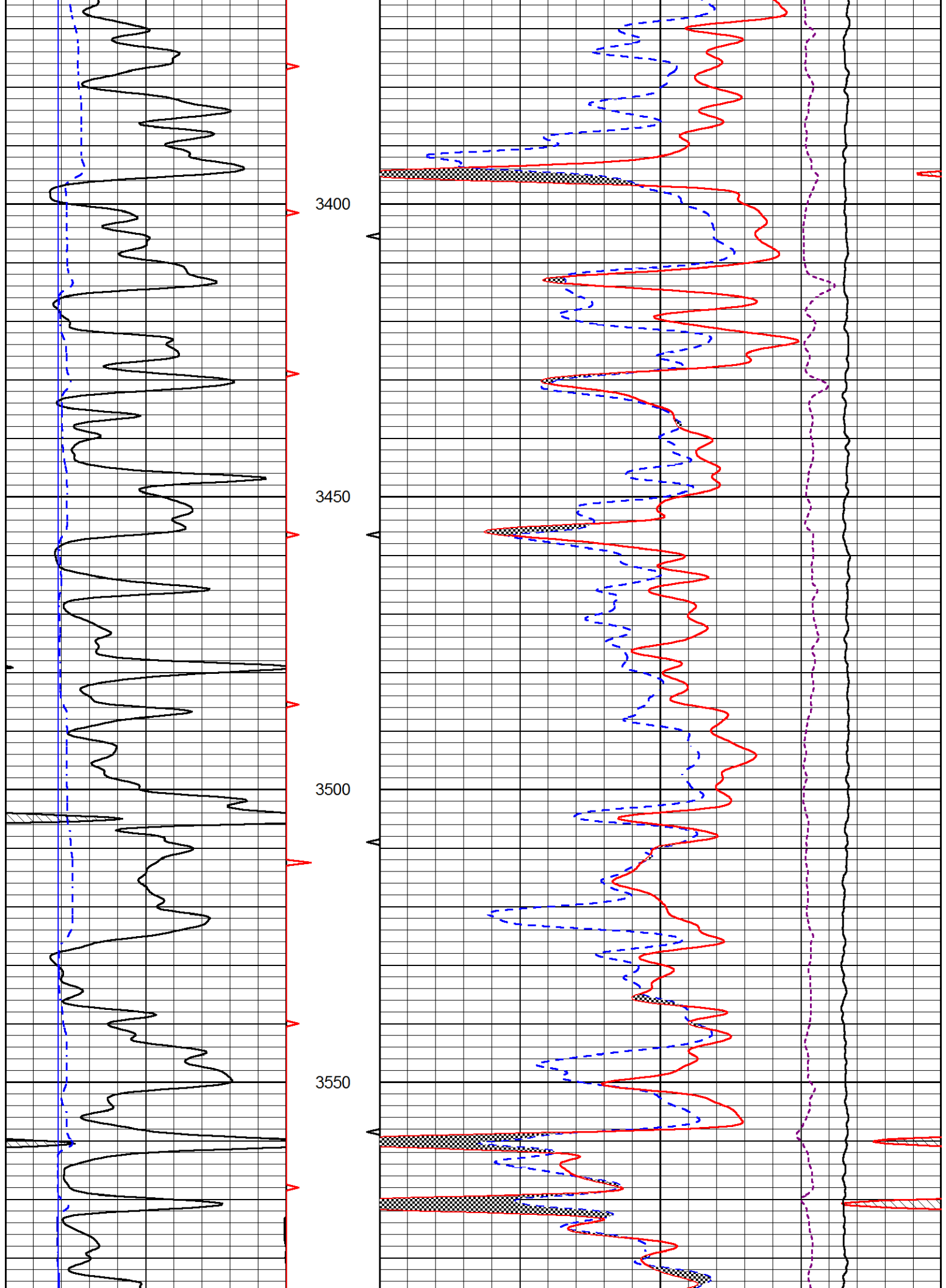
MAIN PASS

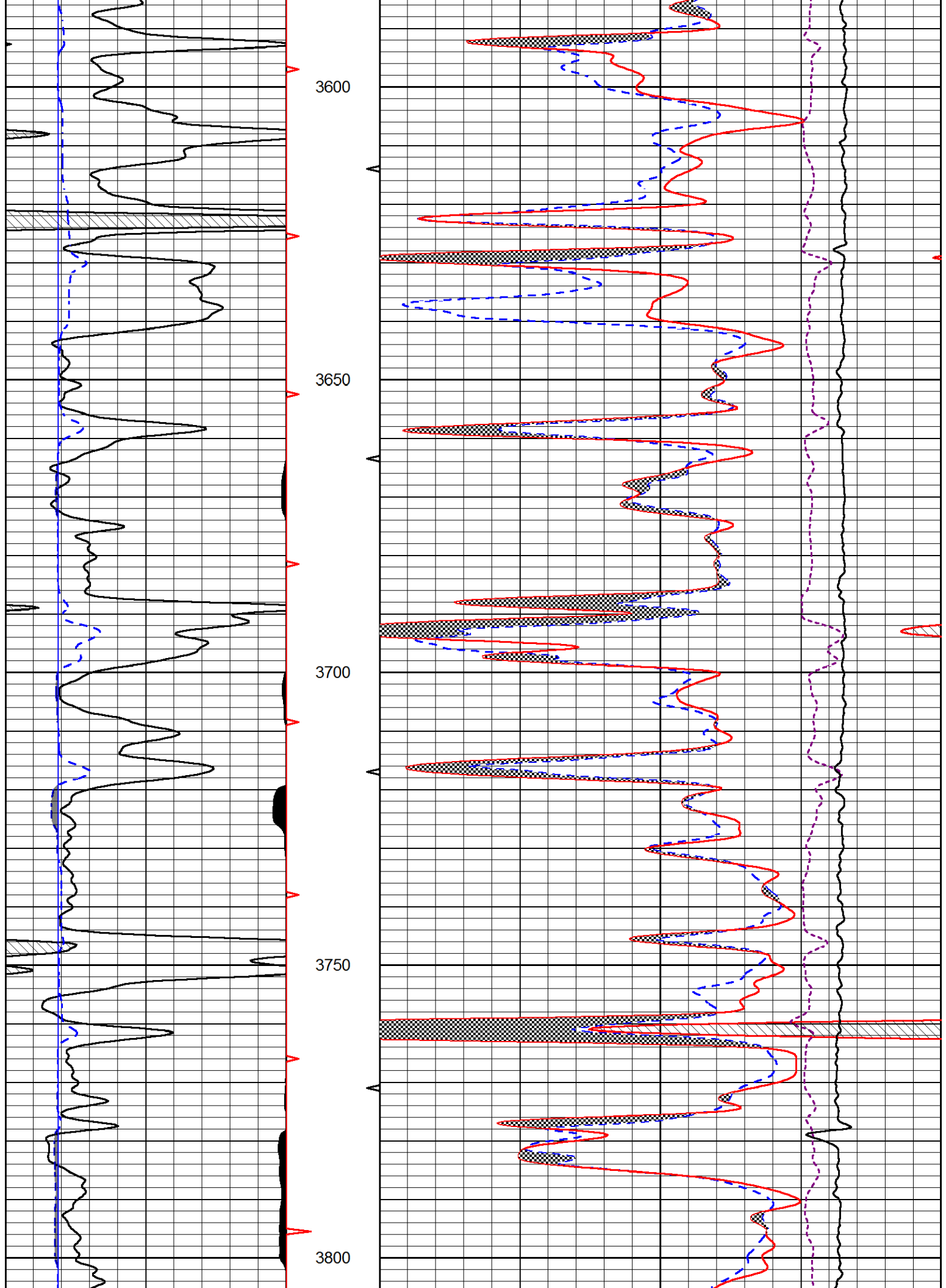
Database File pickrell_duff a 1.db
 Dataset Pathname STKML/pass3.1
 Presentation Format cndlspec
 Dataset Creation Thu Mar 08 06:03:43 2018
 Charted by Depth in Feet scaled 1:240

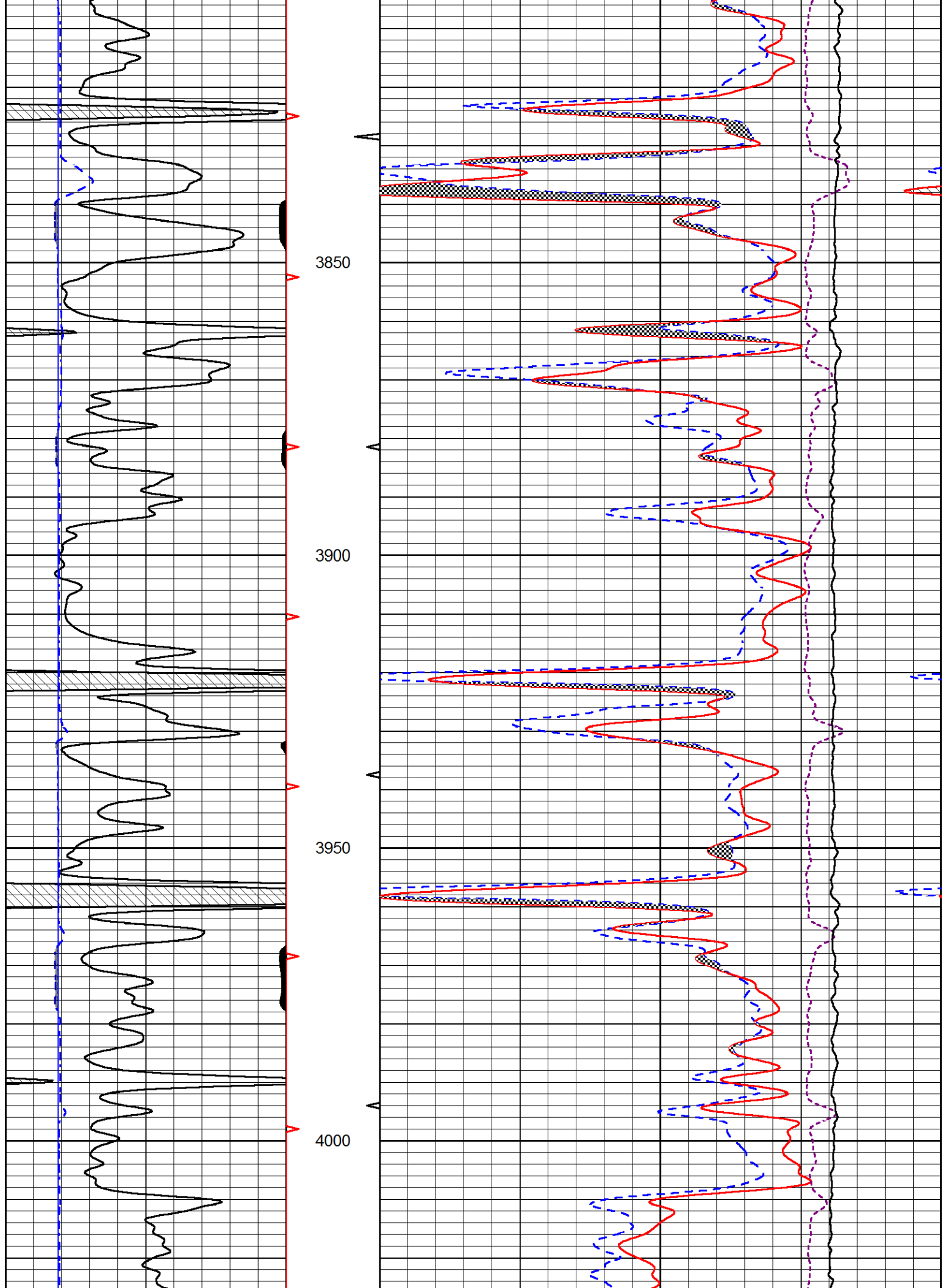
0	Gamma Ray (GAPI)	150
6	DCAL (in)	16

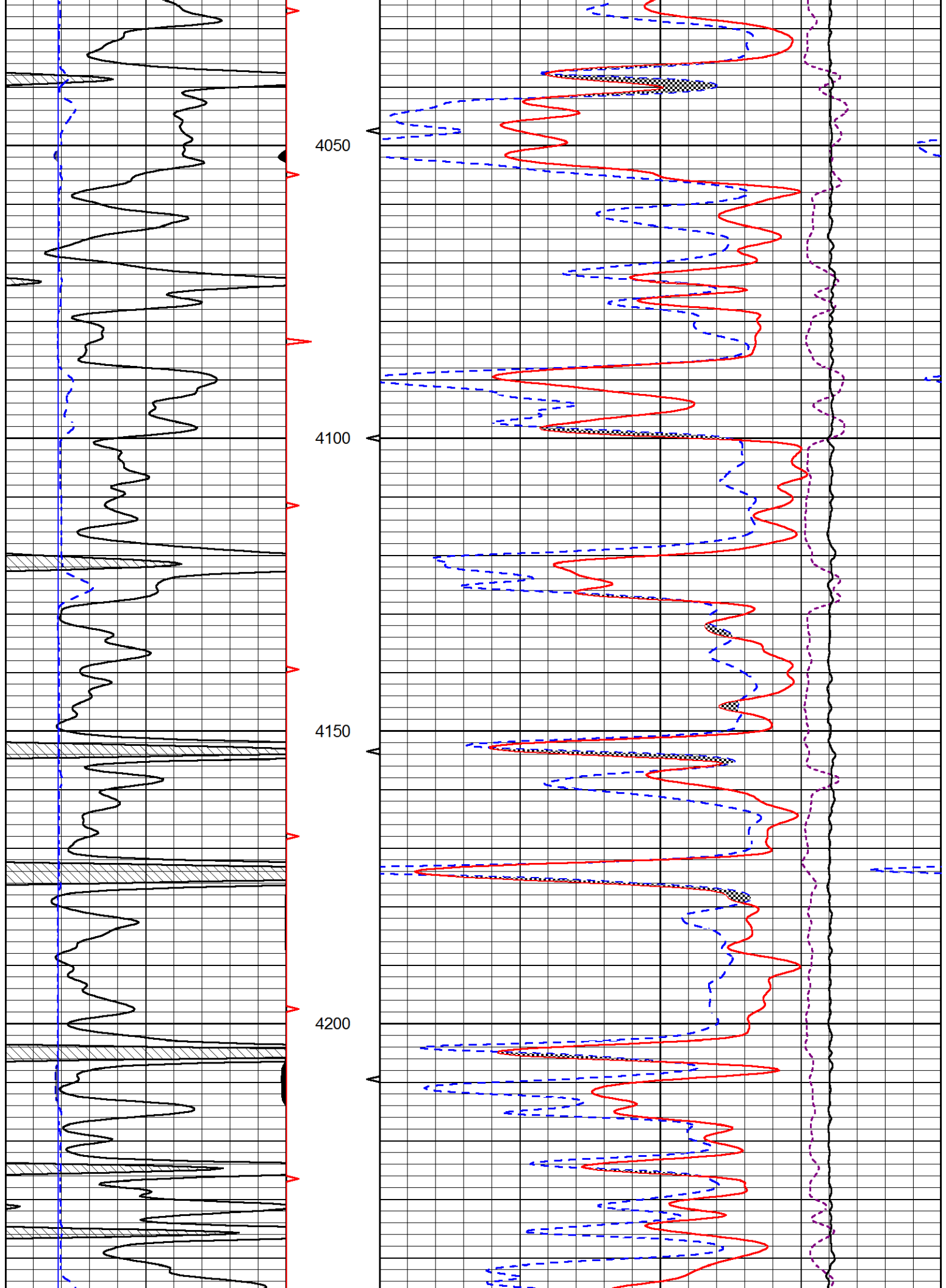
30	CNLS (pu)	-10
30	Compensated Density 2.71g/cc (pu)	-10
10000	Line Tension (lb)	0
-0.75	Correction (g/cc)	0.75

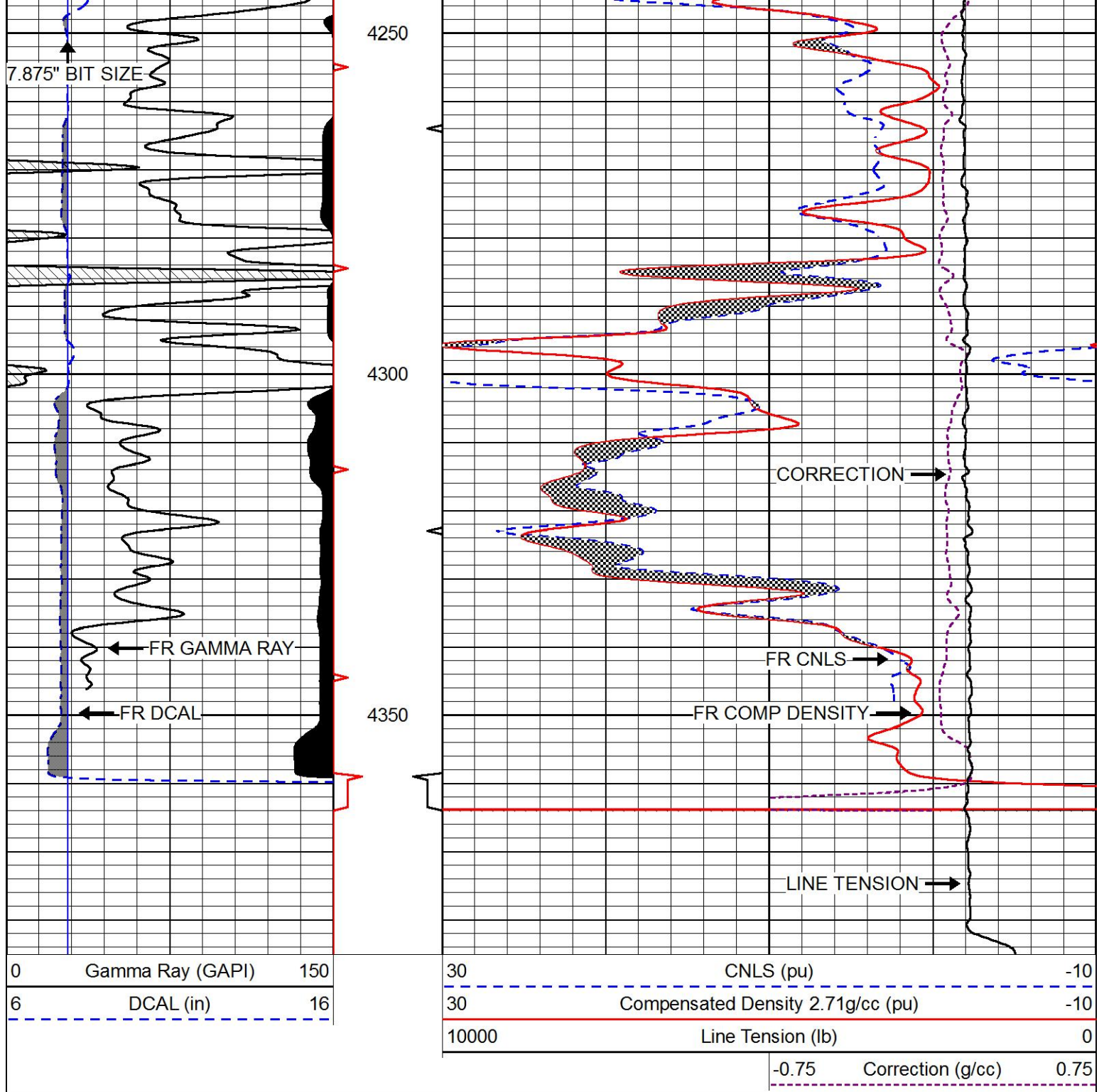










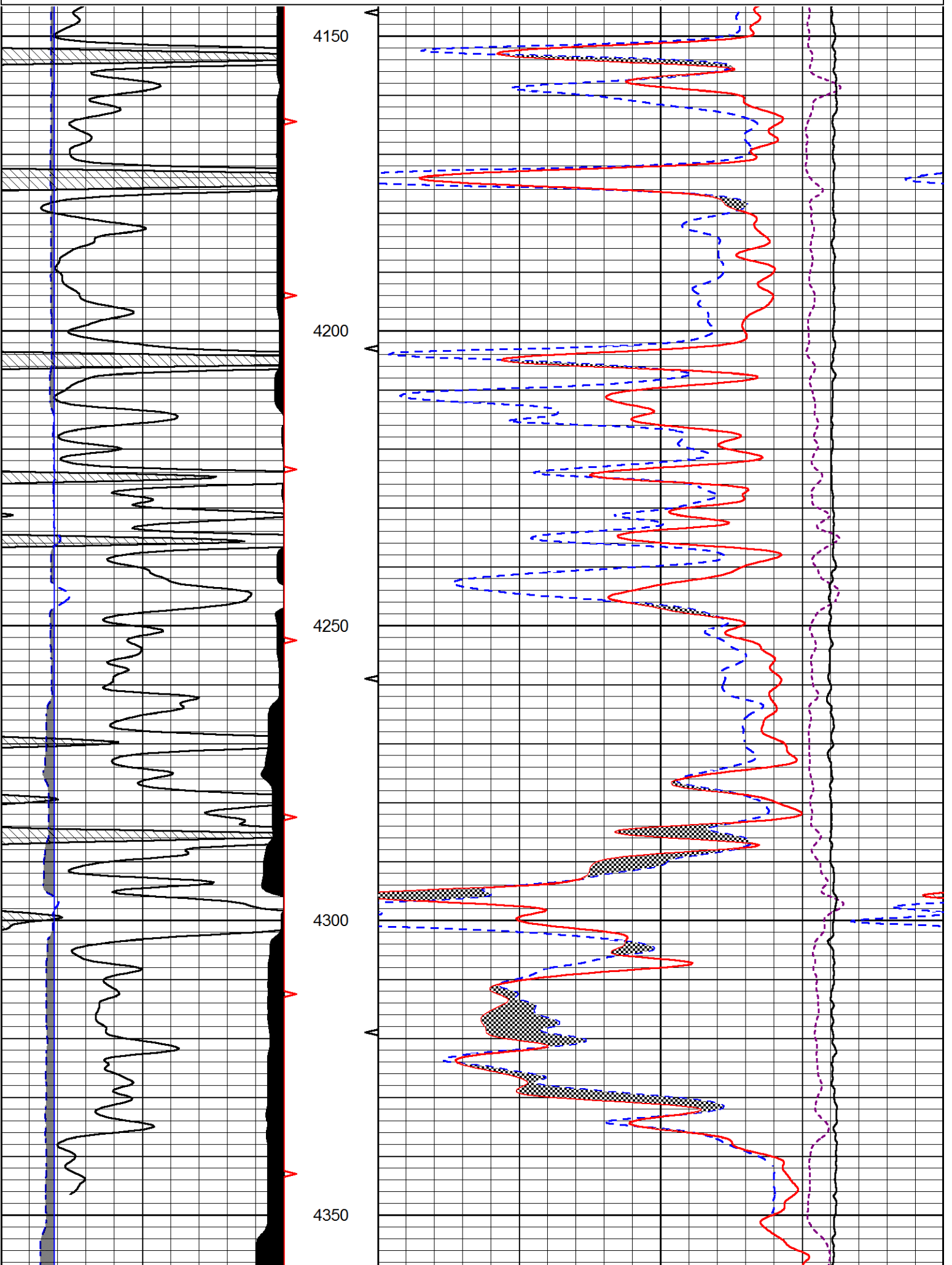


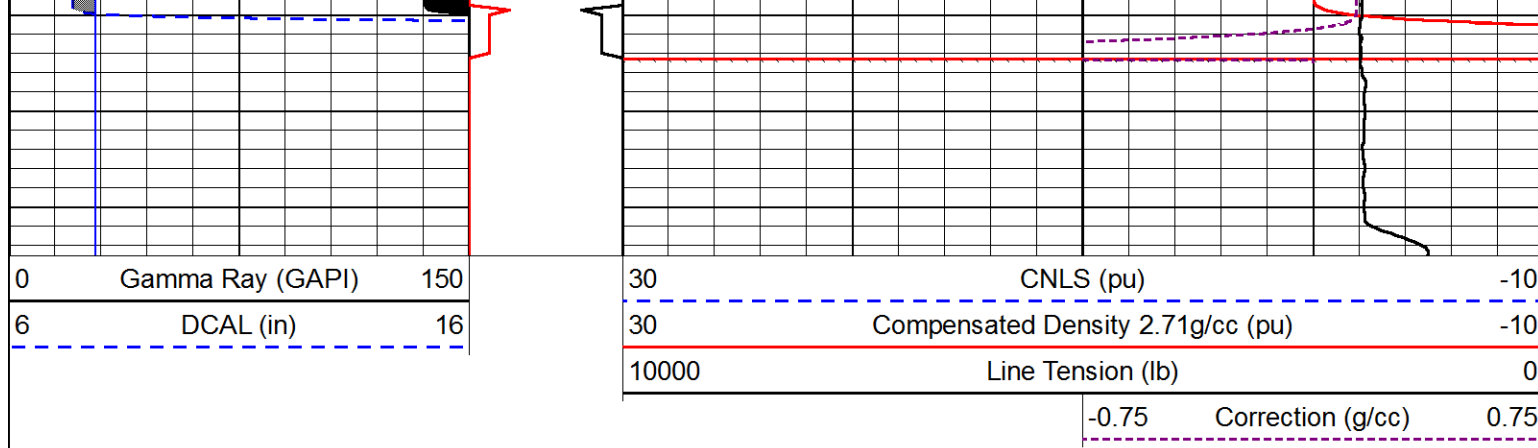
REPEAT SECTION

Database File pickrell_duff a 1.db
 Dataset Pathname STKML/pass2.1
 Presentation Format cndlspec
 Dataset Creation Thu Mar 08 06:28:42 2018
 Charted by Depth in Feet scaled 1:240

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

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





Calibration Report		
Database File	pickrell_duff a 1.db	
Dataset Pathname	STKML/pass3.1	
Dataset Creation	Thu Mar 08 06:03:43 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:	Mon Jan 15 11:19:55 2018

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	30000.0000	-1.0000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	38000.0000	-0.6000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-65.7500

Compensated Density Calibration Report

Serial-Model:	182-152-M&W
Source / Verifier:	16955B / 2ci
Master Calibration Performed:	Thu Mar 08 04:54:58 2018

Master Calibration						
	Density			Far Detector	Near Detector	
Magnesium	1.755	g/cc		4992.81	6098.44	cps
Aluminum	2.645	g/cc		945.67	3945.60	cps
Spine Angle = 75.33			Density/Spine Ratio = 0.517			
Size			Reading			

Small Ring	4.50	in	1.09
Large Ring	15.00	in	1.03

Compensated Neutron Calibration Report
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Serial Number:	207-MW
Tool Model:	M&W
Calibration Performed:	MON JAN 15 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	PICKRELL DRILLING COMPANY, INC.
	Well	DUFF A #1
	Field	NONE
	County	LOGAN
	State	KANSAS