



PIONEER

Pioneer Energy Services

DUAL COMP POROSITY LOG

Company **TDI, INC.**
Well **UNREIN #1**
Field **WILDCAT**
County **ELLIS** State **KANSAS**

Location: API #: 15-051-26920-00-00

Other Services

625' FSL & 565' FEL
SEC 29 TWP 14S RGE 17W

DIL/MEL

Permanent Datum **GROUND LEVEL** Elevation **1926'**
Log Measured From **KELLY BUSHING**
Drilling Measured From **KELLY BUSHING**

Elevation
K.B. 1936'
D.F. N/A
G.L. 1926'

Date **7/26/2018**

Run Number **ONE**

Type Log **CNL/CDL**

Depth Driller **3550'**

Depth Logger **3548'**

Bottom Logged Interval **3519'**

Top Logged Interval **2800'**

Type Fluid In Hole **CHEMICAL**

Salinity, PPM CL **6200**

Density **9.0**

Level **FULL**

Max. Rec. Temp. F **112**

Operating Rig Time **3 HOURS**

Equipment -- Location **91 HAYS**

Recorded By **IAN MABB**

Witnessed By **HERB DEINES**

Borehole Record

Casing Record

Run No.

Bit

From

To

Size

Wgt.

From

To

ONE 12.25"

0'

1106'

8.625"

23#

0'

1106'

TWO 7.875"

1106'

TD

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

MUNJOR, KS.

2 MILES EAST, 1 MILE SOUTH AND WEST 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: HERB DEINES

Secondary Witness:

Secondary Witness:

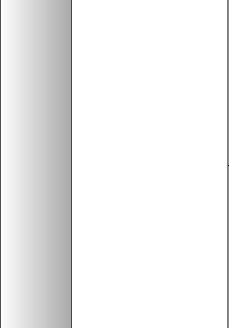
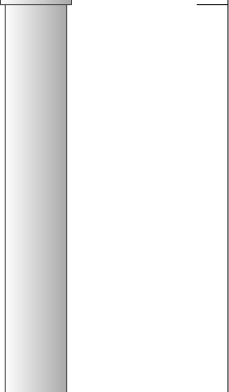
Secondary Witness:

<<< Fold Here >>>

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.

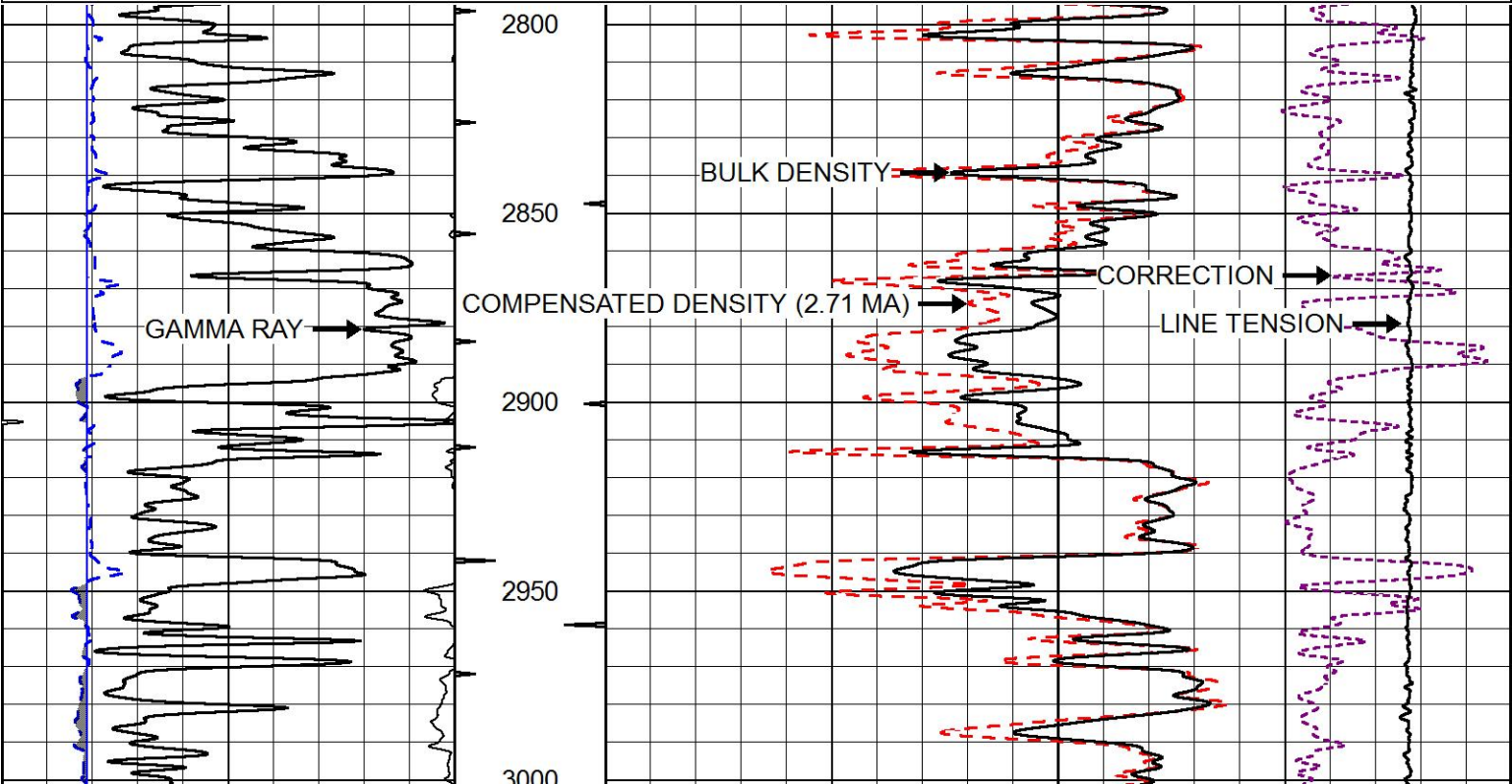
Top - Bottom

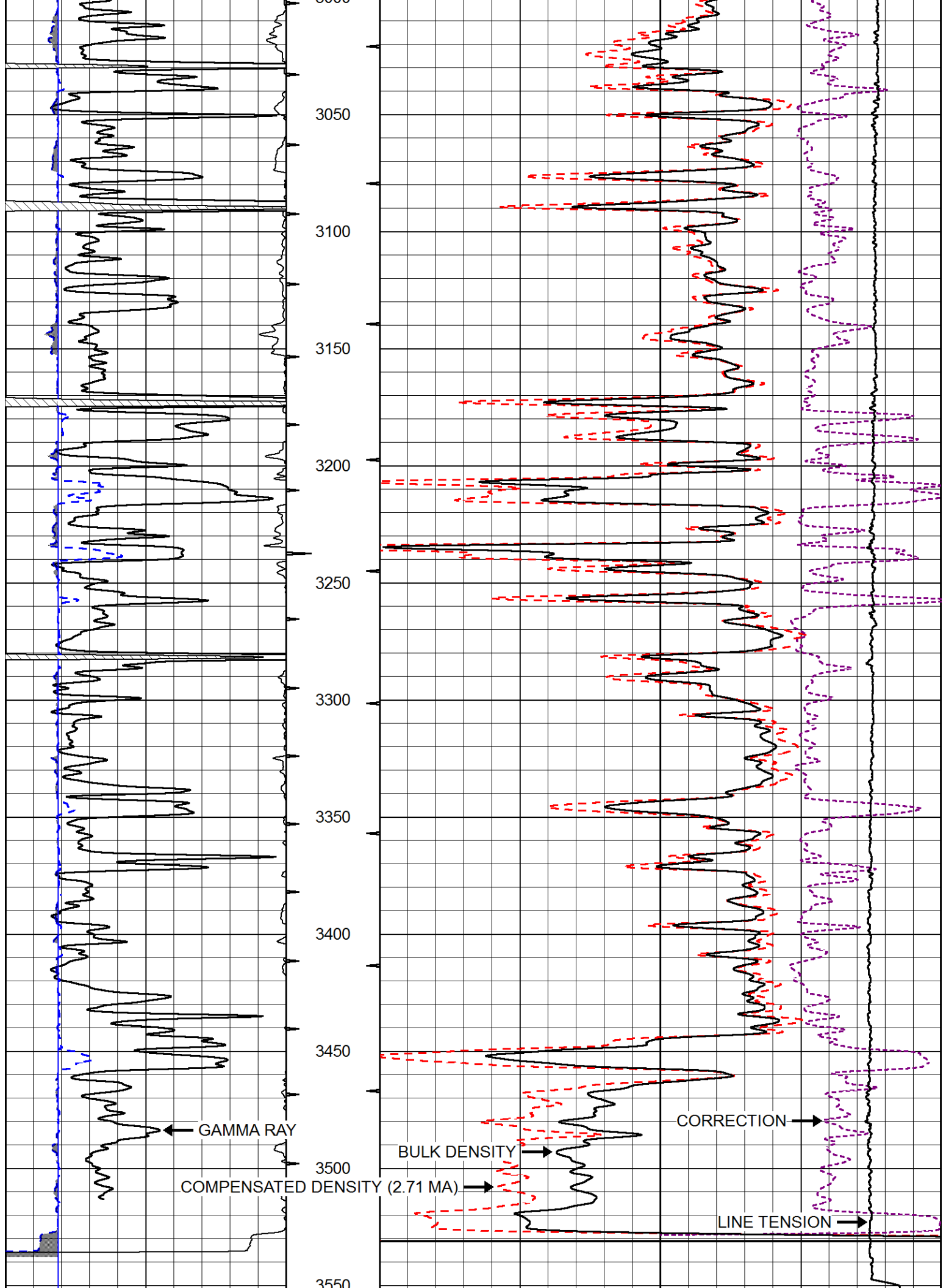
M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	-6	2
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	73	0	5.5	0	3548	112	7.875

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 (817-947)	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: tdi_unrein_1.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 tdi_unrein_1.db Dataset Pathname stackmel/pass3.2 Presentation Format cdl Dataset Creation Fri Jul 27 00:20:34 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			





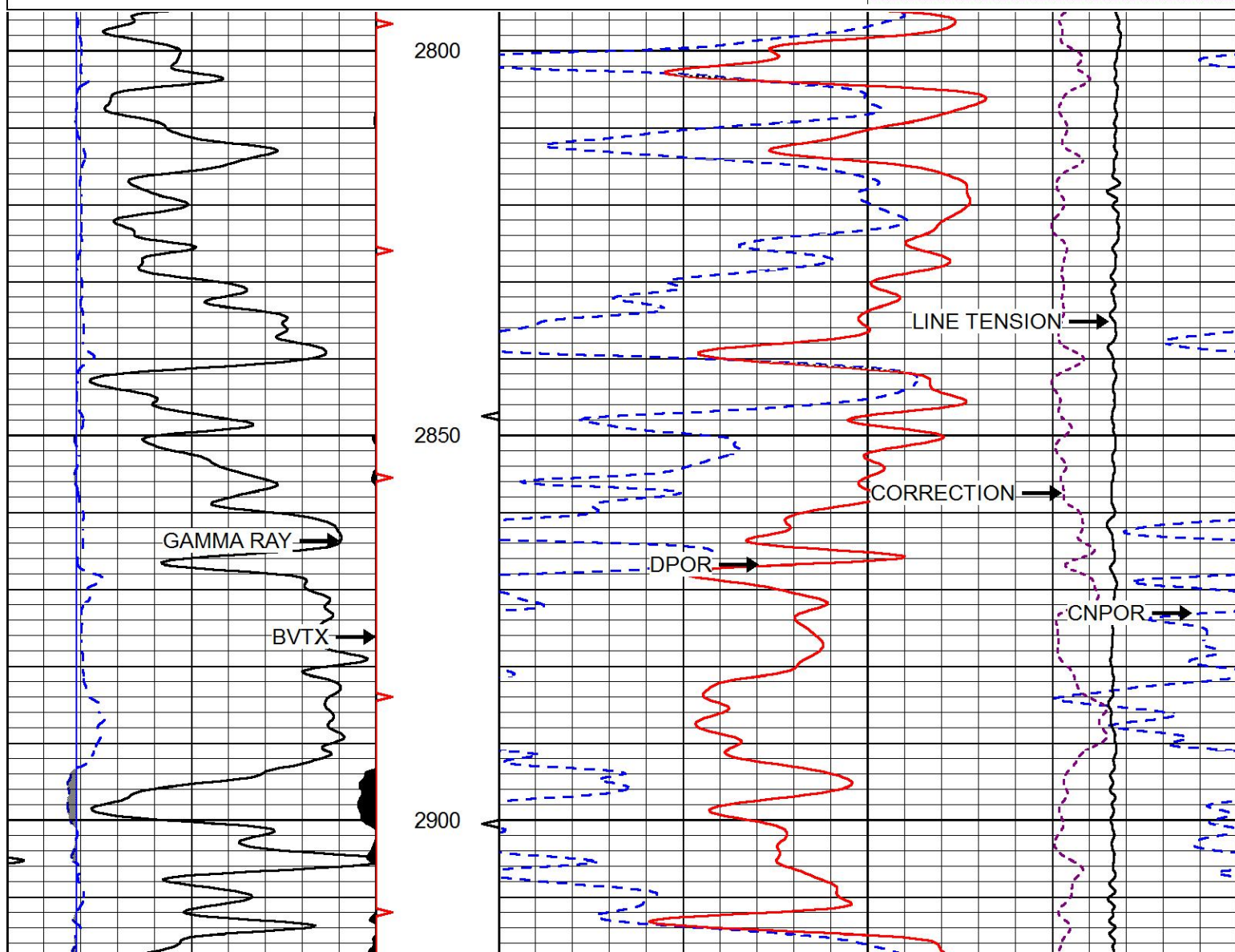
0	GAMMA RAY (GAPI)	150	COMPENSATED DENSITY (2.71 MA)	
6	DCAL (in)	16	30	(pu) -10
			2	BULK DENSITY (g/cc) 3
			15000	LINE TENSION (lb) 0
			-0.25	CORRECTION (g/cc) 0.25

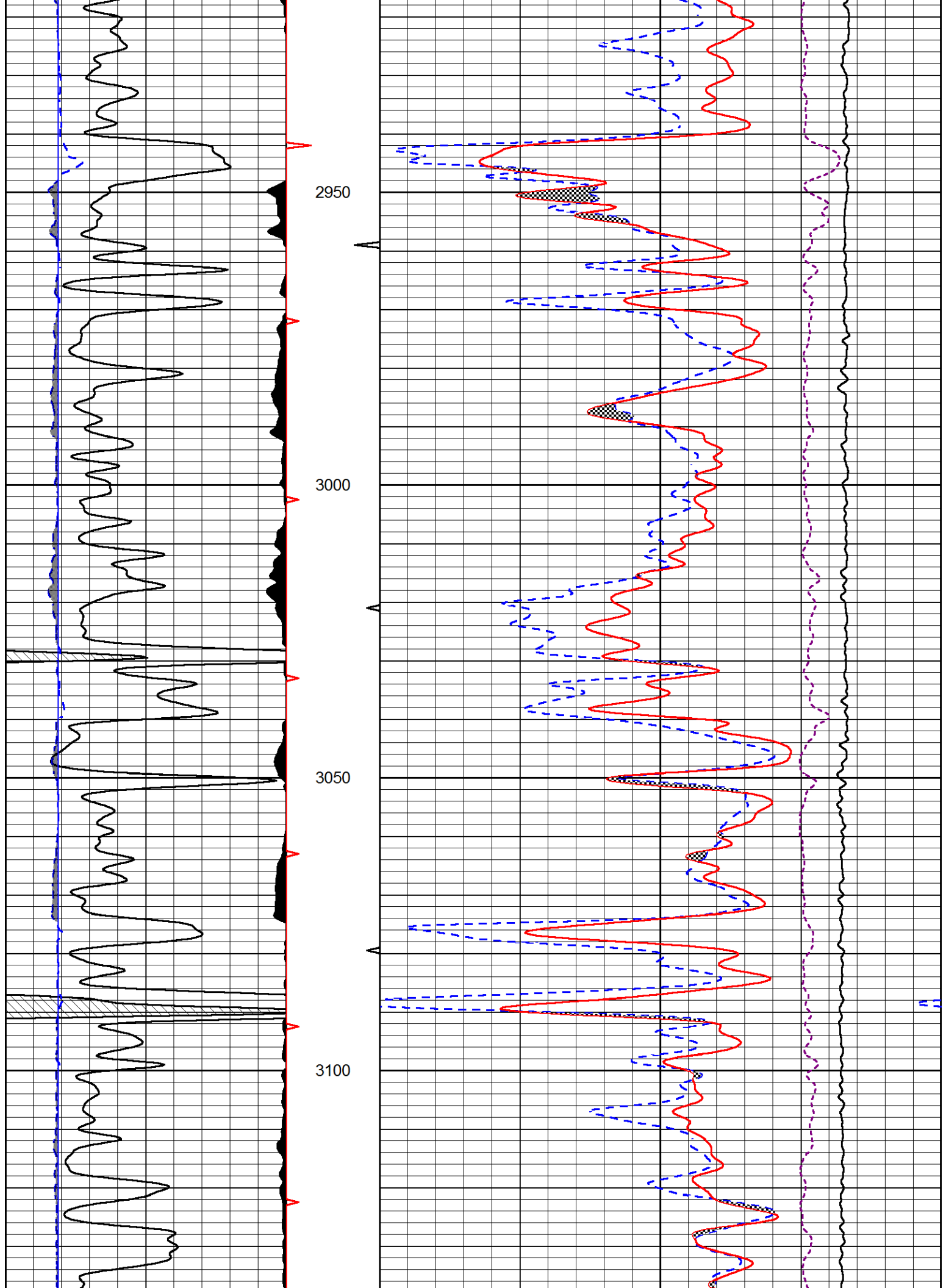


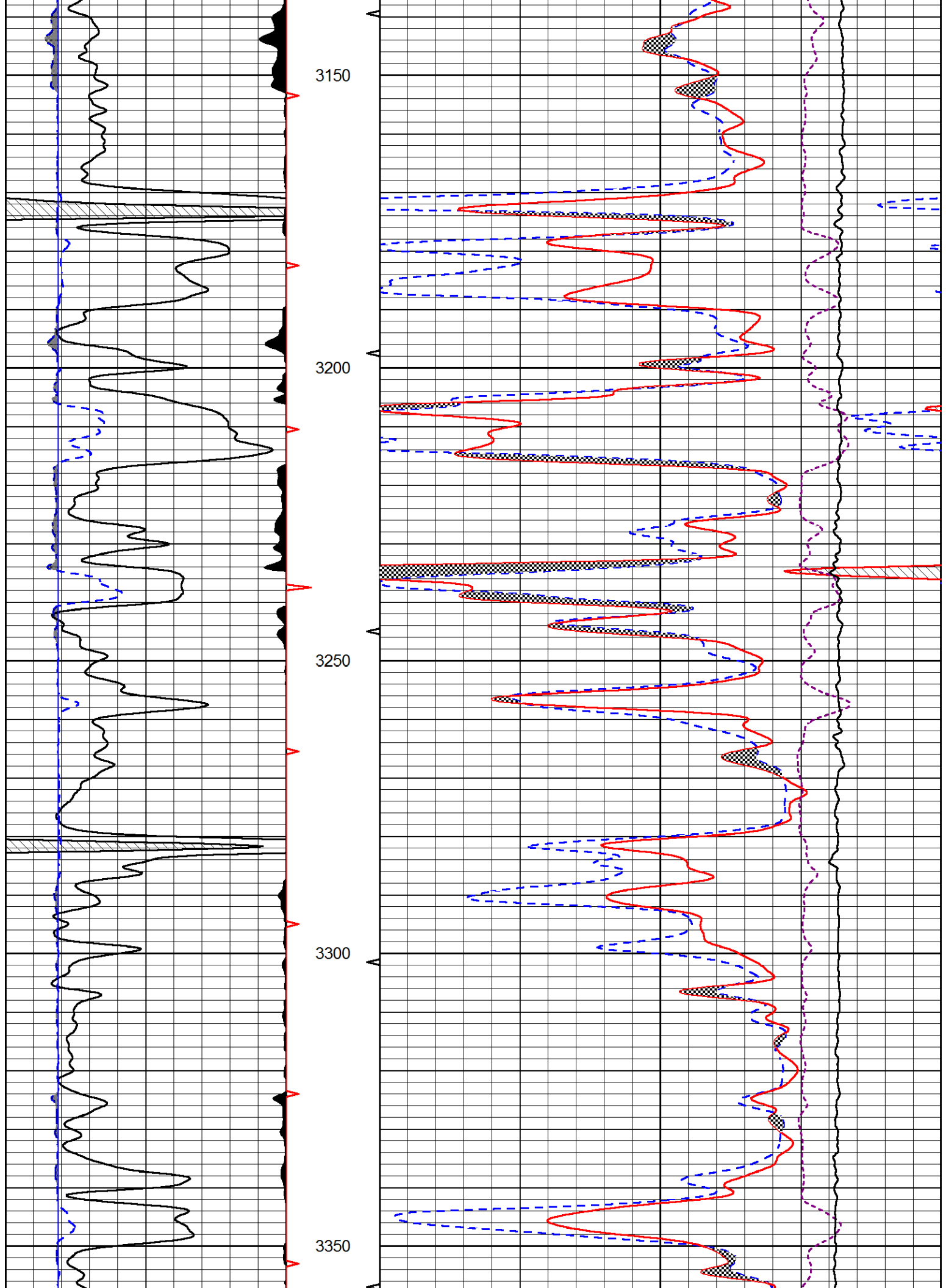
MAIN PASS

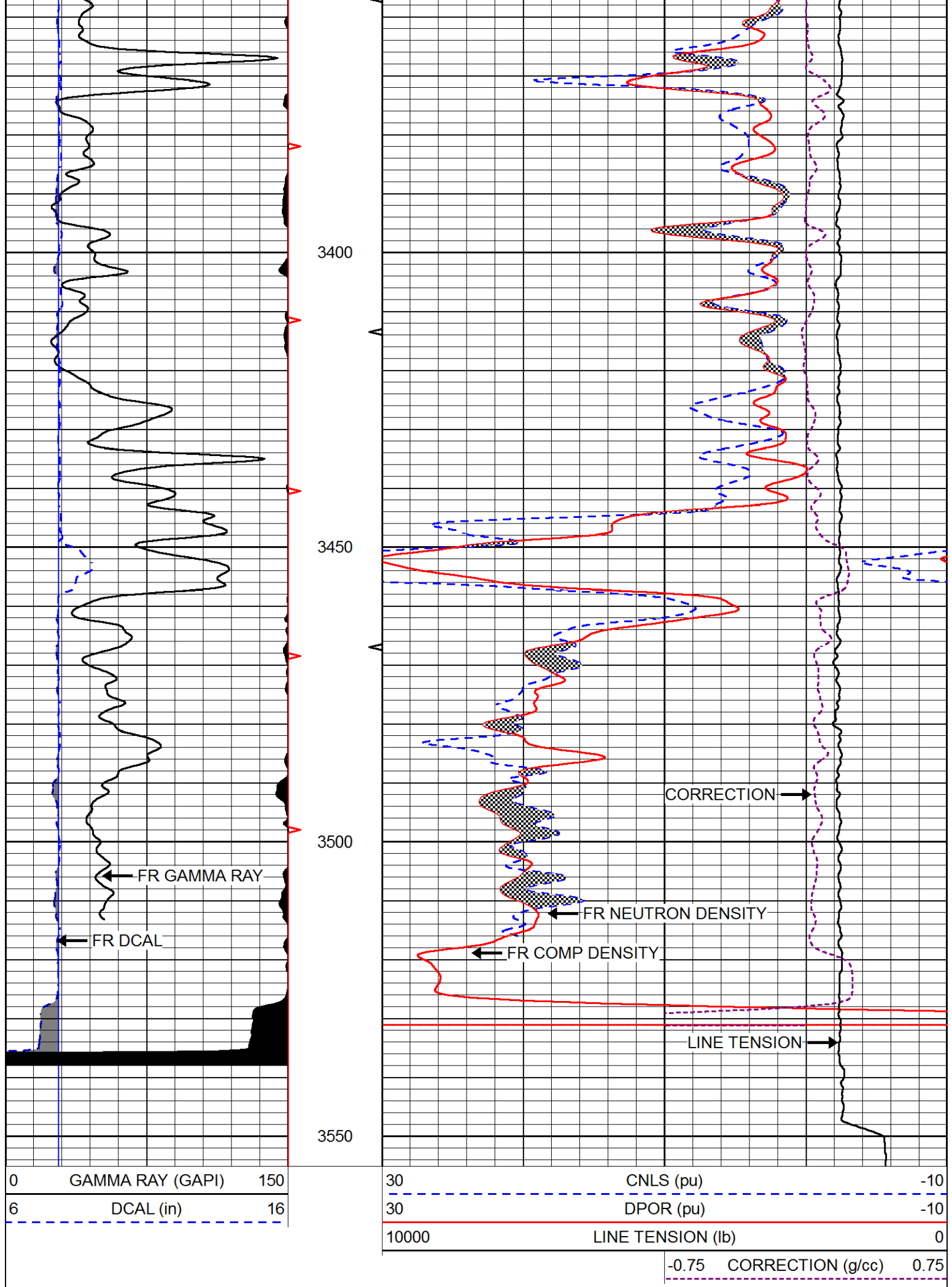
Database File tdi_unrein_1.db
Dataset Pathname stackmel/pass3.2
Presentation Format cndlspec
Dataset Creation Fri Jul 27 00:20:34 2018
Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	30	CNLS (pu)	-10
6	DCAL (in)	16	30	DPOR (pu)	-10
			10000	LINE TENSION (lb)	0
			-0.75	CORRECTION (g/cc)	0.75







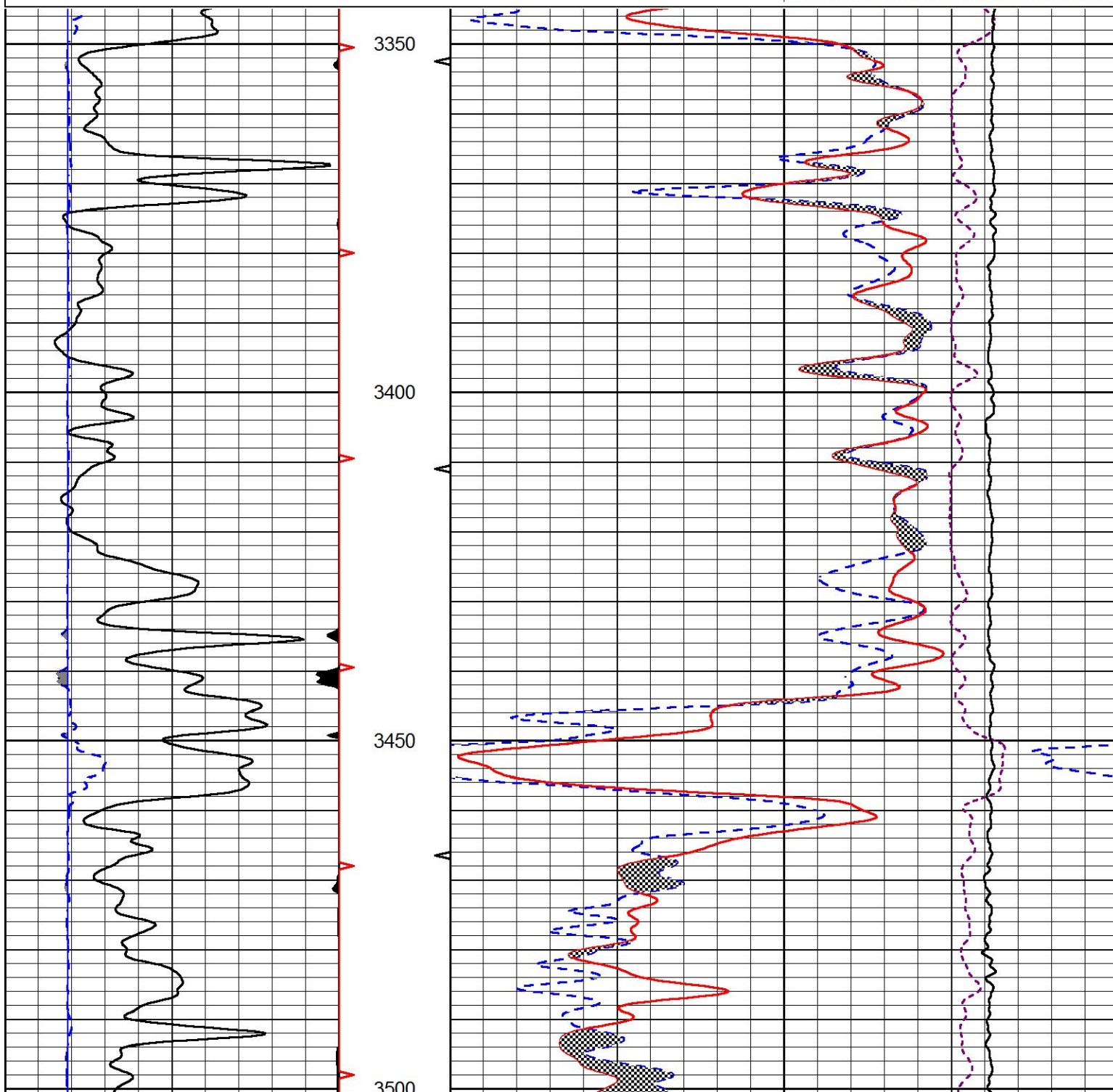


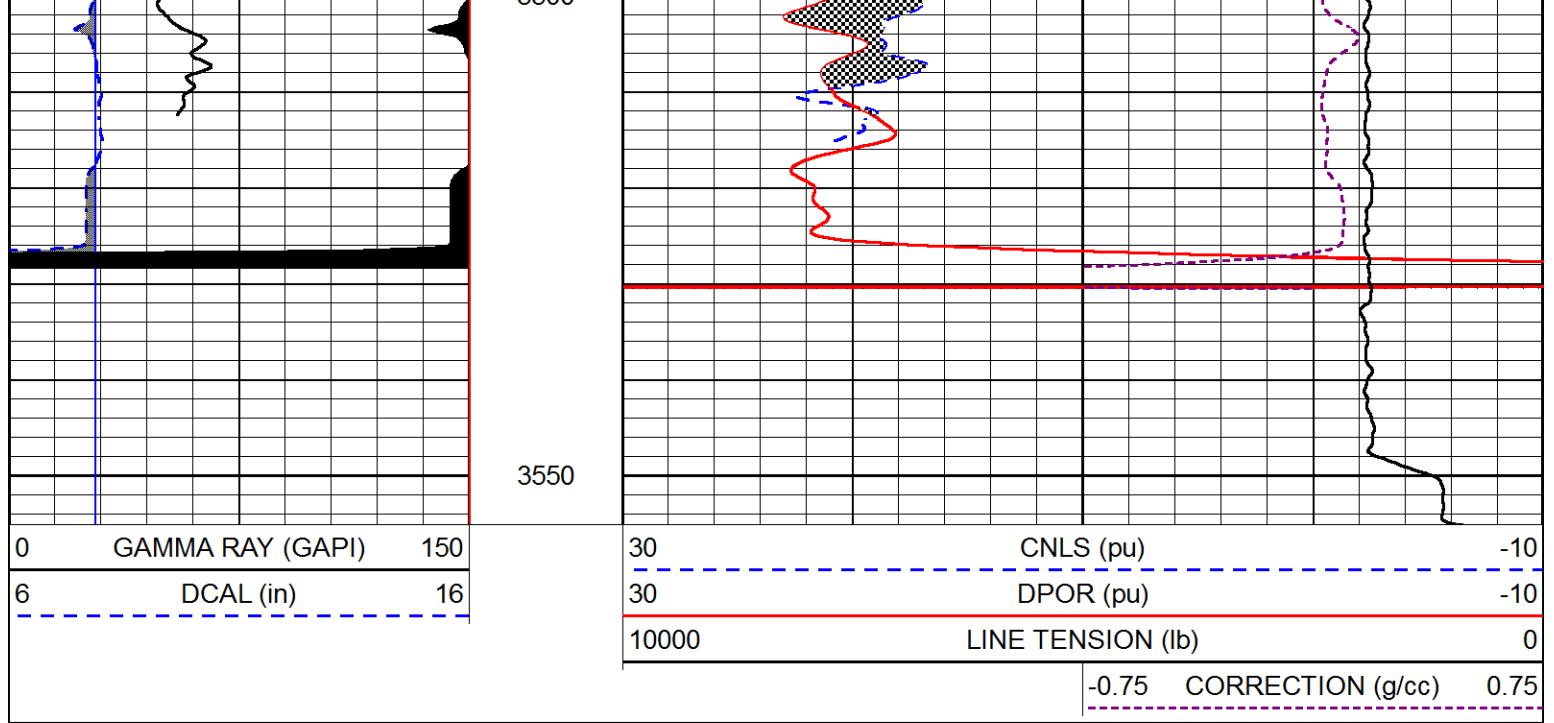
REPEAT SECTION

Database File tdi_unrein_1.db
Dataset Pathname stackmel/pass2.1
Presentation Format cndlspec
Dataset Creation Fri Jul 27 00:37:39 2018
Charted by Depth in Feet scaled 1:240

0 GAMMA RAY (GAPI) 150
6 DCAL (in) 16

30 CNLS (pu) -10
30 DPOR (pu) -10
10000 LINE TENSION (lb) 0
-0.75 CORRECTION (g/cc) 0.75





Calibration Report

Database File tdi_unrein_1.db
 Dataset Pathname stackmel/pass3.1
 Dataset Creation Thu Jul 26 23:48:56 2018

Dual Induction Calibration Report

Serial-Model: 933 (HT)-PSI HIGH TEMP
 Calibration Performed: Sun Jul 15 05:36:29 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		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: PSI-01-PSIML
 Performed: Sun Jul 15 07:40:28 2018

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	27000.0000	-0.8000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	30000.0000	-0.6000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-65.8500

Compensated Density Calibration Report

Serial-Model: 817-947-M&W
 Source / Verifier: 16955B / 2ci
 Master Calibration Performed: Sun Jul 15 05:36:52 2018

Master Calibration

	Density			Far Detector	Near Detector	
Magnesium	1.755	g/cc		6127.15	5922.31	cps
Aluminum	2.670	g/cc		1141.85	3762.09	cps
Spine Angle = 74.89			Density/Spine Ratio = 0.526			
	Size			Reading		
Small Ring	4.50	in		1.02		
Large Ring	15.00	in		1.15		

Compensated Neutron Calibration Report
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Serial Number:	207-MW
Tool Model:	M&W
Calibration Performed:	SUN JUL 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:	Sun Jul 15 05:37:08 2018	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.6000	GAPI/cps

 PIONEER Pioneer Energy Services	Company	TDI, INC.
	Well	UNREIN #1
	Field	WILDCAT
	County	ELLIS
	State	KANSAS