



PIONEER

Pioneer Energy Services

DUAL COMP POROSITY LOG

Company TDI, INC.

Well ROB BEN FAMILY #1

Field N/A

County ELLIS

State KANSAS

Location: API #: 15-051-26847-00-00

Other Services

NW NE SW NE
1360' FNL & 1720' FEL
SEC 3 TWP 15S RGE 16W

DIL/MEL

Permanent Datum GROUND LEVEL Elevation 1893'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 1903'
D.F. N/A
G.L. 1893'

Company TDI, INC.
Well ROB BEN FAMILY #1
Field N/A
County ELLIS
State KANSAS

Date 11/29/2016

Run Number ONE

Type Log CNL/CDL

Depth Driller 3575'

Depth Logger 3574'

Bottom Logged Interval 3546'

Top Logged Interval 2800'

Type Fluid In Hole CHEMICAL

Salinity, PPM CL 5300

Density 9.3

Level FULL

Max. Rec. Temp. F 112 DEG F

Operating Rig Time 2 1/2 HOURS

Equipment -- Location 108 COLBY

Recorded By T. MARTIN

Witnessed By TOM DENNING

Borehole Record

Casing Record

Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	00'	215'	8.625"	23#	00'	215'
TWO	7.875"	215'	TD				

<<< 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.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

WALKER, KS, 5.4 MILES S OF I-70
TO ANTONINO RD, 1/2 W, S 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: T. MARTIN
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: TOM DENNING
Secondary Witness: HERB DEINES
Secondary Witness:
Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\tdi_robben family_#1.db
Dataset field/well/stkml/pass3.1/_vars_

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in	degF	in	in	g/cc	2	g/cc
	7.875	112	5.5	0	1		2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m	mmho/m	mV	degF	Off	ft
		0	0	-335	40		3574



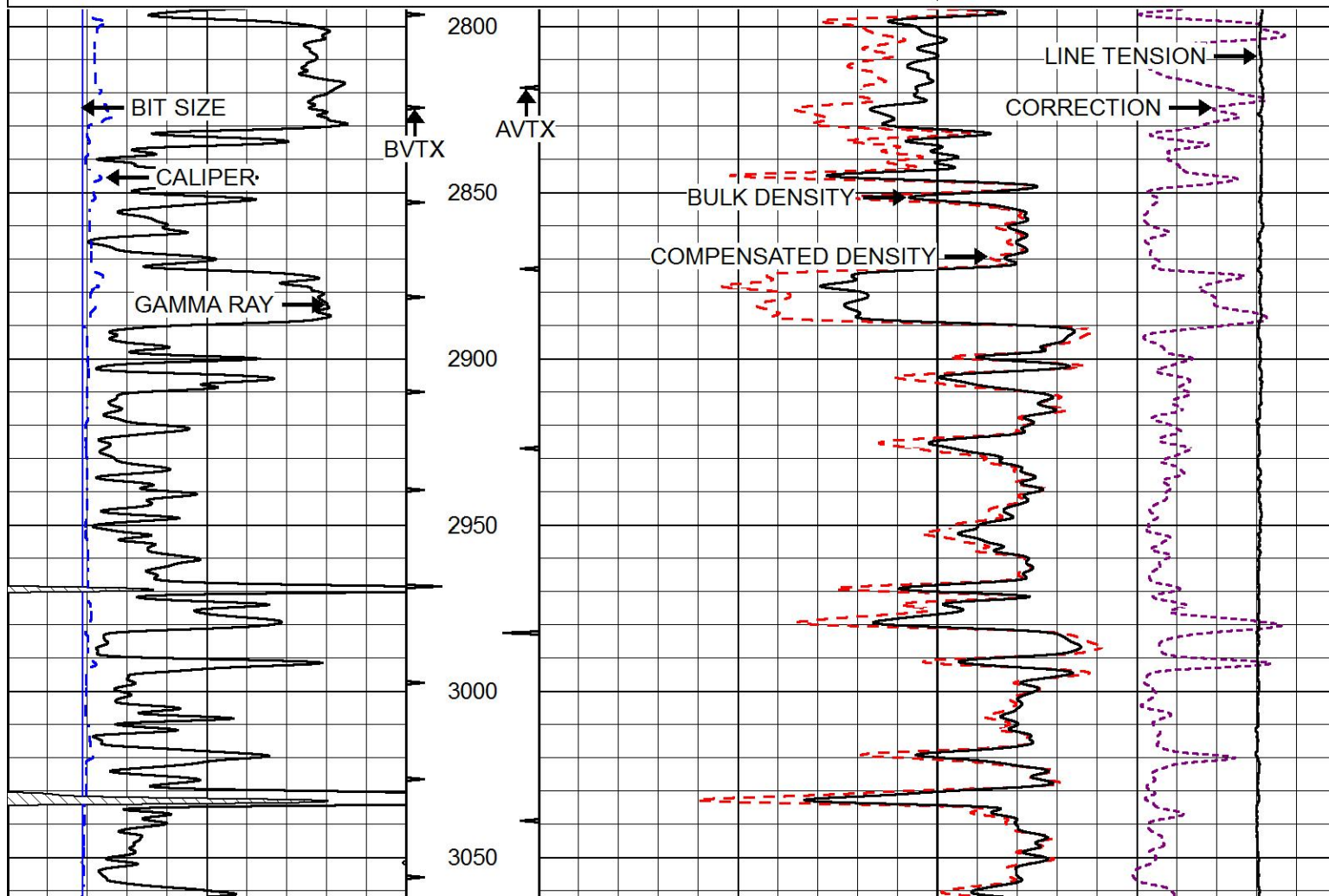
2" SCALE BULK DENSITY

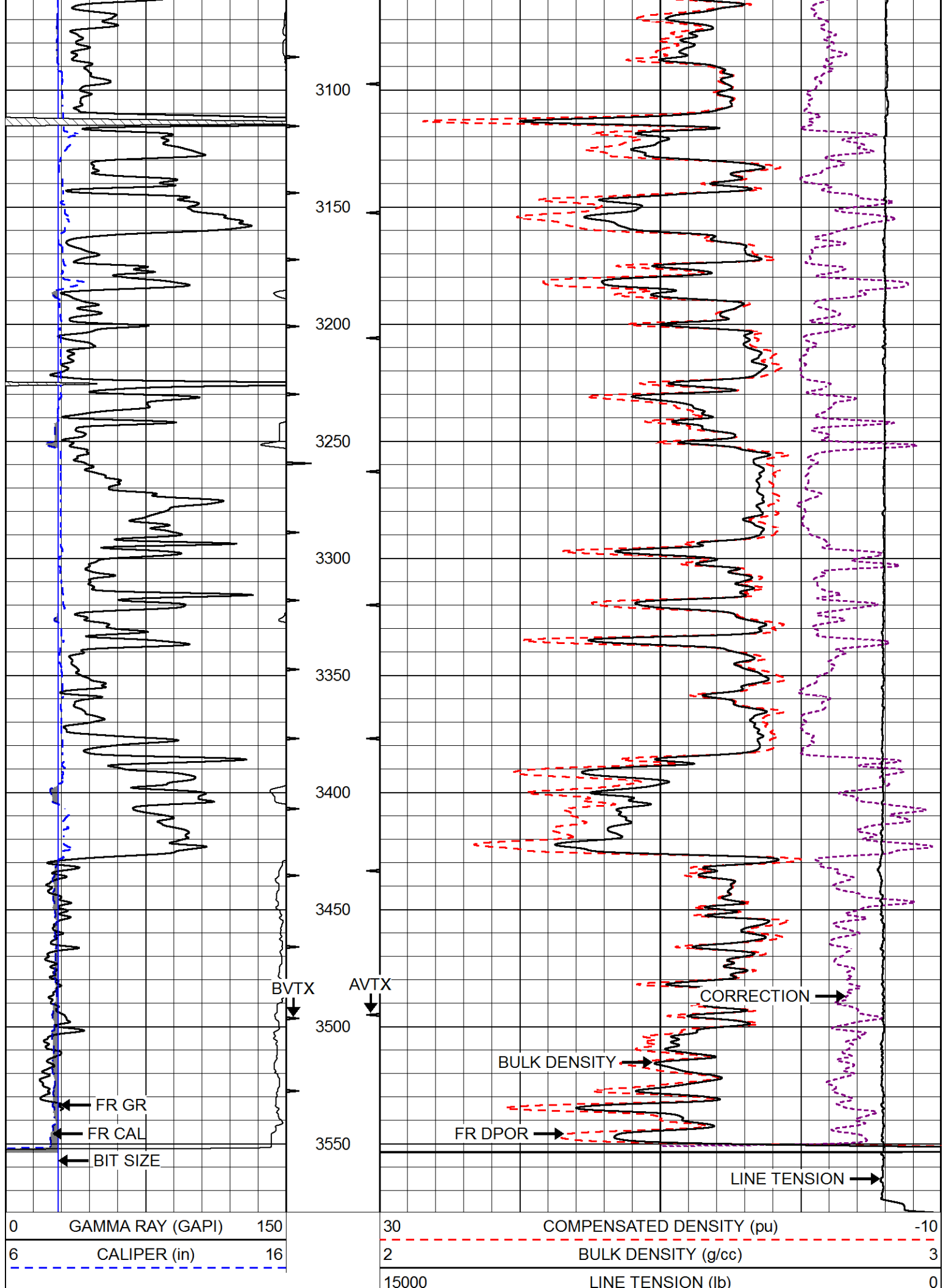
MAIN PASS

Database File tdi_robben family_#1.db
Dataset Pathname stkml/pass3.3
Presentation Format cdl
Dataset Creation Tue Nov 29 19:41:12 2016
Charted by Depth in Feet scaled 1:600

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

30	COMPENSATED DENSITY (pu)	-10
2	BULK DENSITY (g/cc)	3
15000	LINE TENSION (lb)	0
-0.25	CORRECTION (g/cc)	0.25







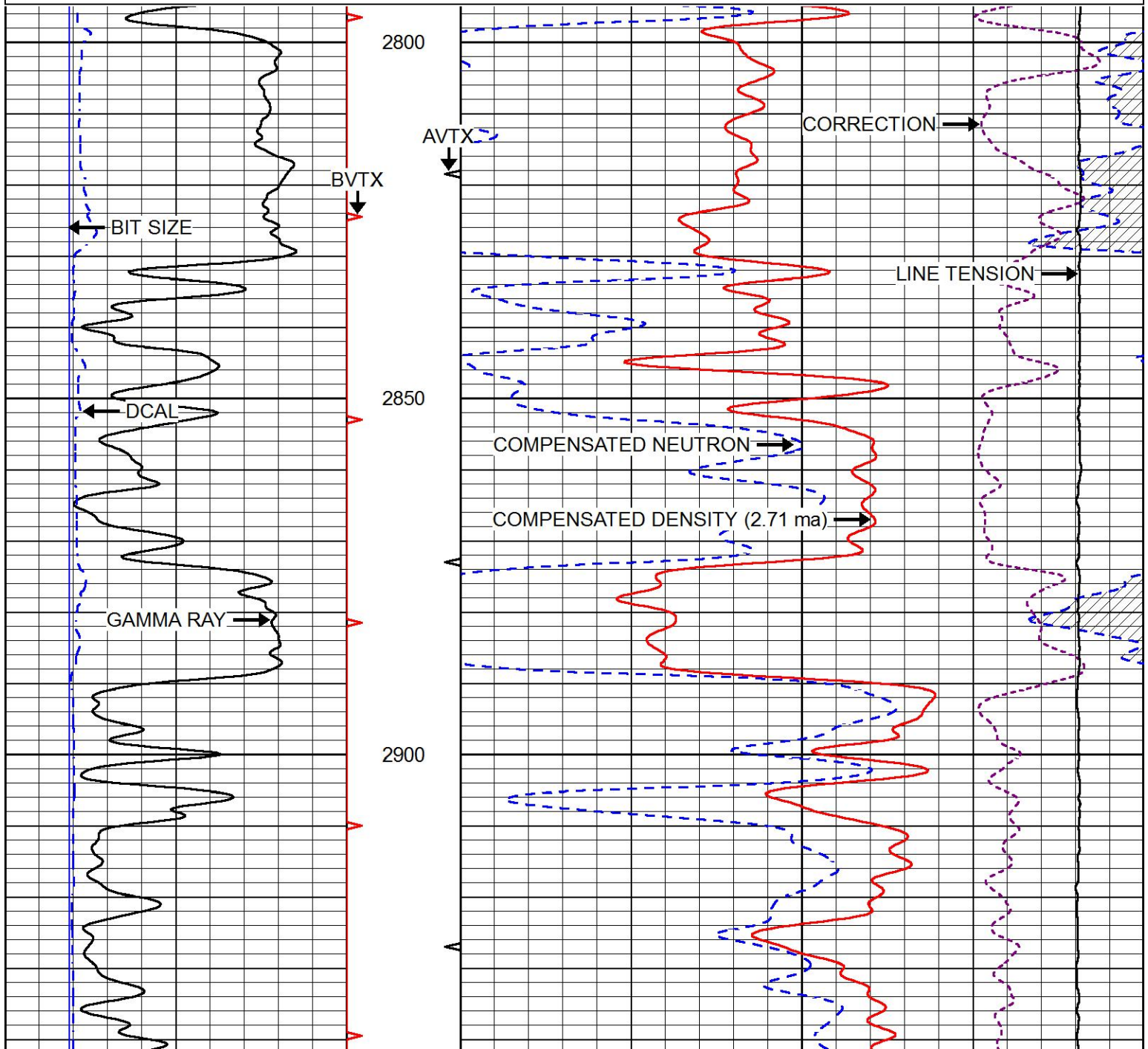
MAIN PASS

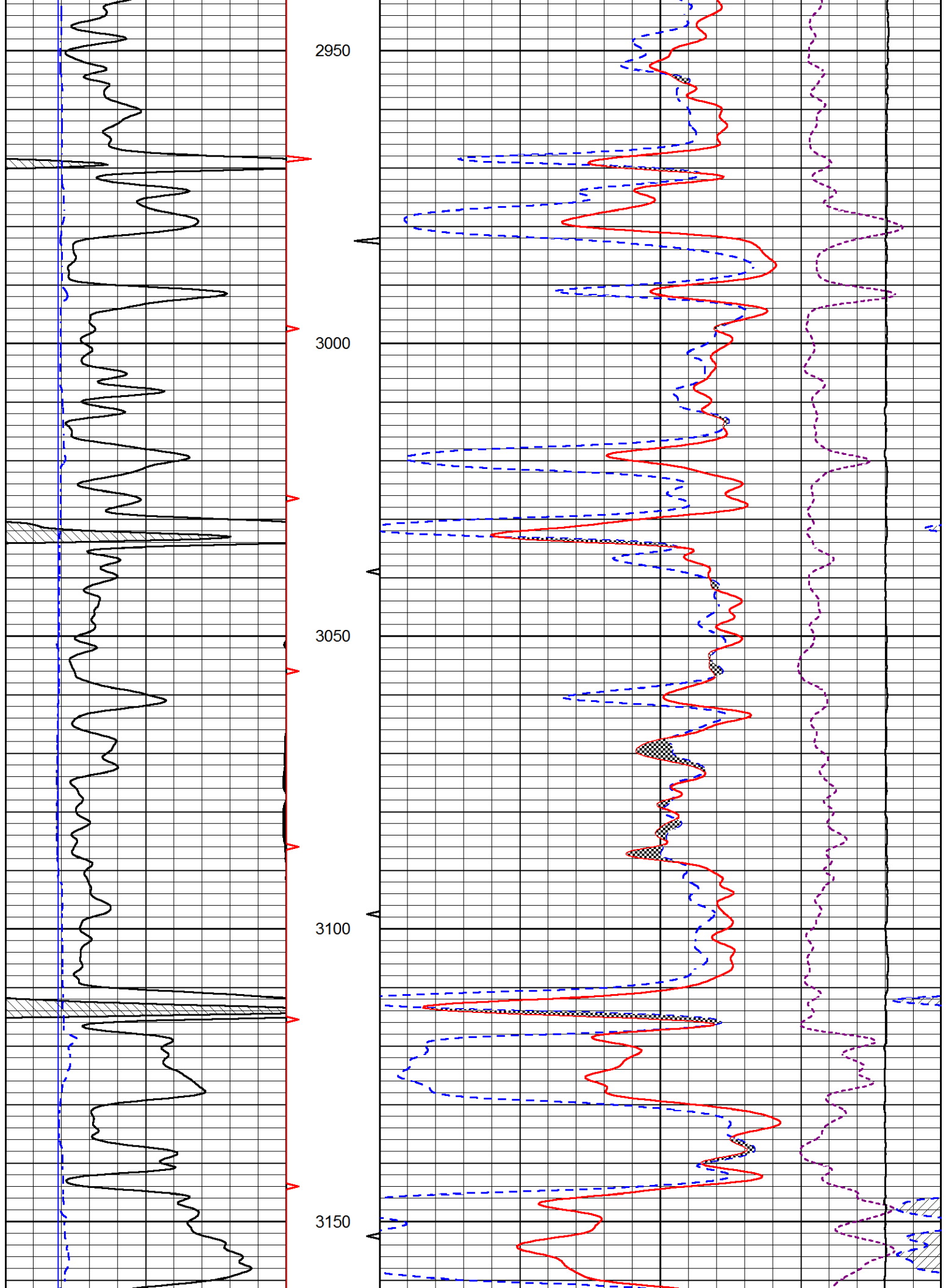
Database File tdi_robber family_#1.db
 Dataset Pathname stkml/pass3.1
 Presentation Format cndlspec
 Dataset Creation Tue Nov 29 20:06:47 2016
 Charted by Depth in Feet scaled 1:240

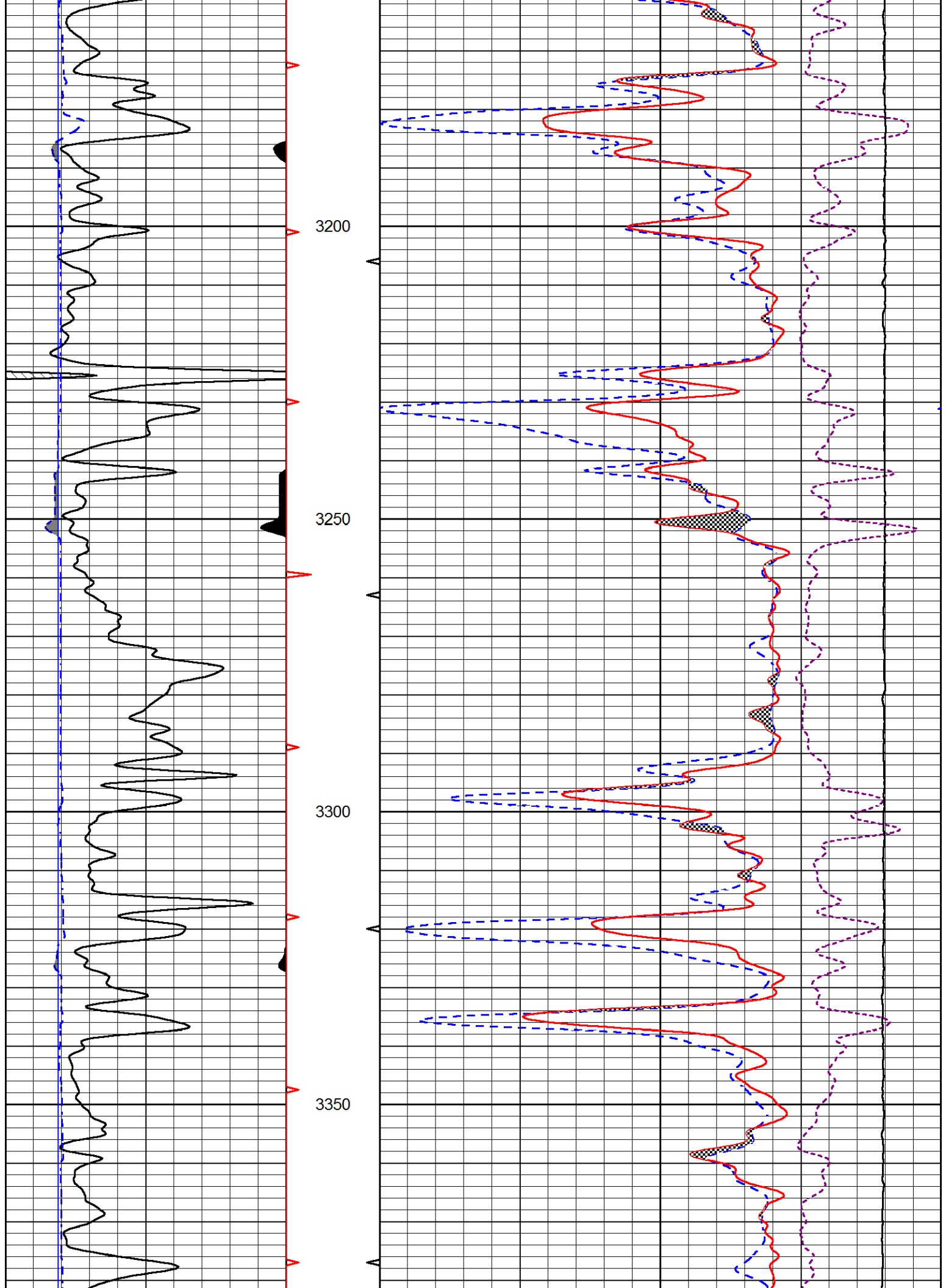
0	GAMMA RAY (GAPI)	150
6	dcal (in)	16
6	BIT SIZE (in)	16

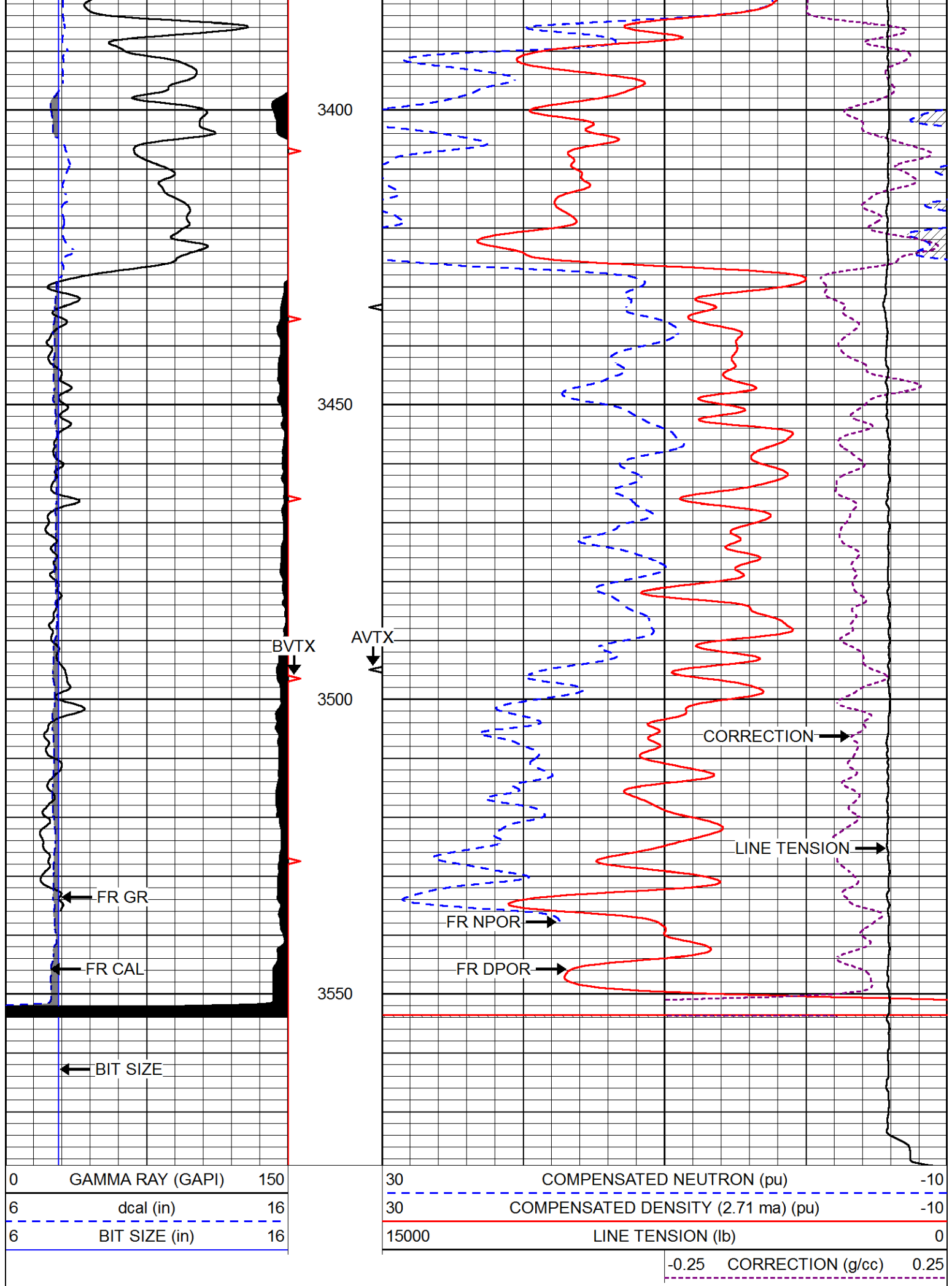
30	COMPENSATED NEUTRON (pu)	-10
30	COMPENSATED DENSITY (2.71 ma) (pu)	-10
15000	LINE TENSION (lb)	0

-0.25 CORRECTION (g/cc) 0.25







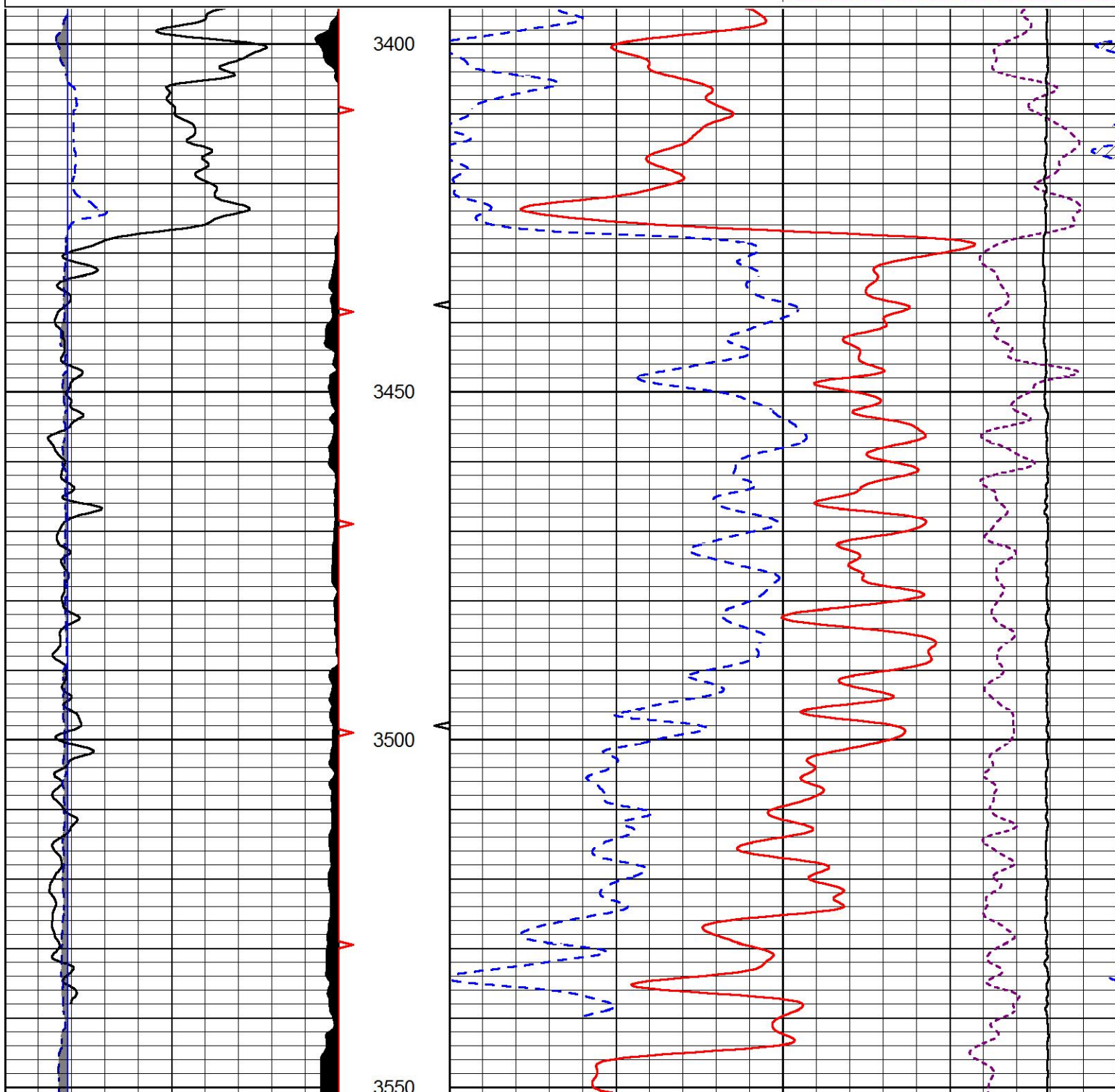


REPEAT SECTION

Database File tdi_robber family_#1.db
 Dataset Pathname stkml/pass2.1
 Presentation Format cndlspec
 Dataset Creation Tue Nov 29 19:34:21 2016
 Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
6	dcal (in)	16
6	BIT SIZE (in)	16

30	COMPENSATED NEUTRON (pu)	-10
30	COMPENSATED DENSITY (2.71 ma) (pu)	-10
15000	LINE TENSION (lb)	0
-0.25	CORRECTION (g/cc)	0.25



0			GAMMA RAY (GAPI)	150
6			dcal (in)	16
6			BIT SIZE (in)	16
30			COMPENSATED NEUTRON (pu)	-10
30			COMPENSATED DENSITY (2.71 ma) (pu)	-10
15000			LINE TENSION (lb)	0
			-0.25 CORRECTION (g/cc)	0.25

Calibration Report	
Database File	tdi_robber family_#1.db
Dataset Pathname	stkml/pass3.1
Dataset Creation	Tue Nov 29 20:06:47 2016

Dual Induction Calibration Report

Serial-Model:	1987-M&W
Calibration Performed:	Thu Nov 17 20:52:56 2016

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.530	-35.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-112.000

Microlog Calibration Report

Serial-Model:	PSI-01-PSI STKBL ML
Performed:	Thu Mar 31 17:14:32 2016

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	24500.0000	-1.0000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	29500.0000	-1.0000
Caliper	1.0001	1.1397	6.5000	18.5000	in	86.0000	-82.5500

Compensated Density Calibration Report
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Serial-Model:	71-914-M&W
Source / Verifier:	/
Master Calibration Performed:	Thu Nov 17 21:42:33 2016

Master Calibration					
	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4314.49	5307.52	cps
Aluminum	2.675	g/cc	822.19	3456.36	cps
Spine Angle = 75.49			Density/Spine Ratio = 0.537		
	Size		Reading		

Small Ring	4.00	in	1.16
Large Ring	14.00	in	1.57

Compensated Neutron Calibration Report
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Serial Number:	tk10-MW
Tool Model:	M&W
Calibration Performed:	Wed Nov 16 11:21:36 2016

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-M&W	
Tool Model:	M&W	
Calibration Performed:	Thu Nov 17 21:13:32 2016	
Calibrator Value:	1000.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	6.2	cps
Sensitivity:	0.5200	GAPI/cps

 PIONEER Pioneer Energy Services	Company	TDI, INC.
	Well	ROBBEN FAMILY #1
	Field	N/A
	County	ELLIS
	State	KANSAS