



DUAL COMP POROSITY LOG

Pioneer Energy Services

Company **HOWELL OIL CO., INC.**
 Well **SABIN B #14**
 Field **BURRTON**
 County **RENO** State **KANSAS**

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Location: **API #: 15-155-21757-00-00**
S/2 NE/4 NE/4
990' FNL & 660' FEL
 SEC 13 TWP 23S RGE 4W
 Permanent Datum **GROUND LEVEL Elevation 1470'**
 Log Measured From **KELLY BUSHING**
 Drilling Measured From **KELLY BUSHING**
 Other Services **DIL/MEL**

Date	9/10/2018	
Run Number	ONE	
Type Log	CNL/CDL	
Depth Driller	3500'	
Depth Logger	3498'	
Bottom Logged Interval	3469'	
Top Logged Interval	2400'	
Type Fluid In Hole	CHEMICAL	
Salinity, PPM CL	1000	
Density	9.15	
Level	FULL	
Max. Rec. Temp. F	111	
Operating Rig Time	3 HOURS	
Equipment -- Location	91 HAYS	
Recorded By	D. SCHMIDT	
Witnessed By	TERRY MCLEOD	

Borehole Record				Casing Record			
Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0'	311'	8.625"	23#	0'	311'
TWO	7.875"	311'					

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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.

BURRTON,
 2 WEST, 2 NORTH, 1/8 WEST,
 SOUTH INTO

Log Measured From: **KELLY BUSHING** 12 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	Operator:	Primary Witness: TERRY MCLEOD	Secondary Witness:
Operator:	Operator:	Secondary Witness:	Secondary Witness:
Operator:		Secondary Witness:	

Run No.	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
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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 (96-916)	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					
CILD	8.00		DIL-PSI HIGH TEMP (967 (HT))	18.50	3.50	220.00
CILM	4.70					
SP	0.20					

Dataset: howell_sabin b 14.db: field/well/STKML/pass2
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

Log Variables

Database: C:\ProgramData\Warrior\Data\howell_sabin b 14.db

Dataset: field/well/STKML/pass2/_vars_

Top - Bottom

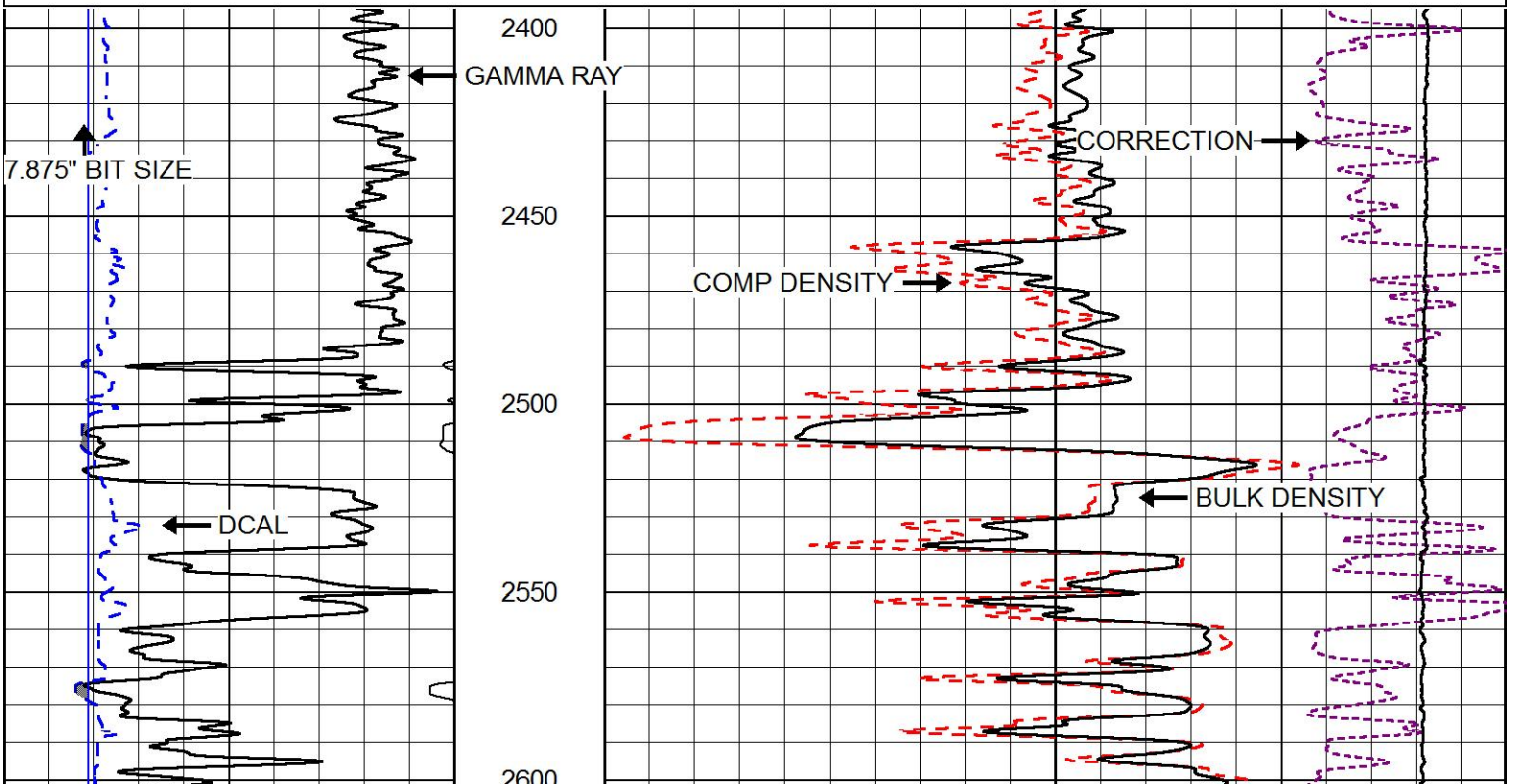
M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	0	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	0	0	5.5	0	0	100	7.875

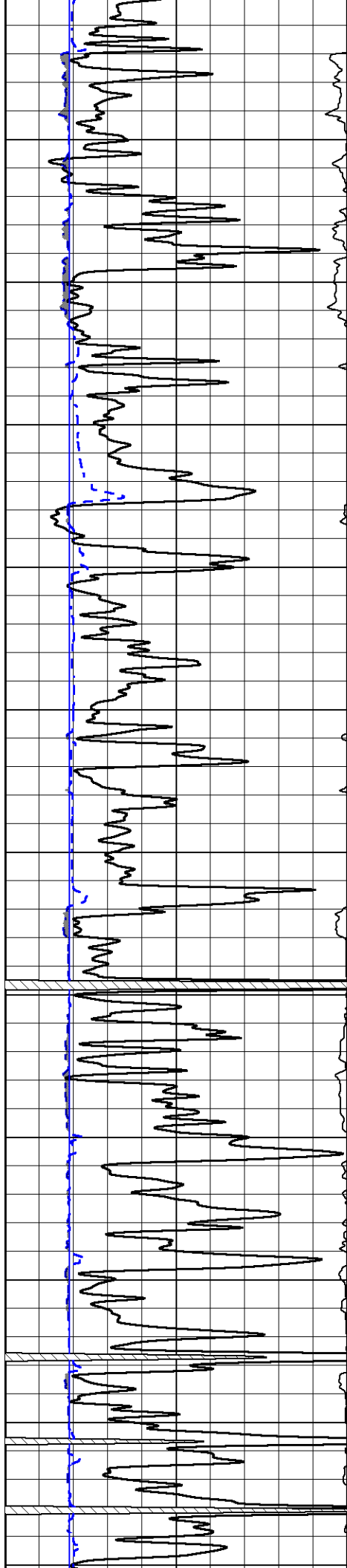


MAIN PASS

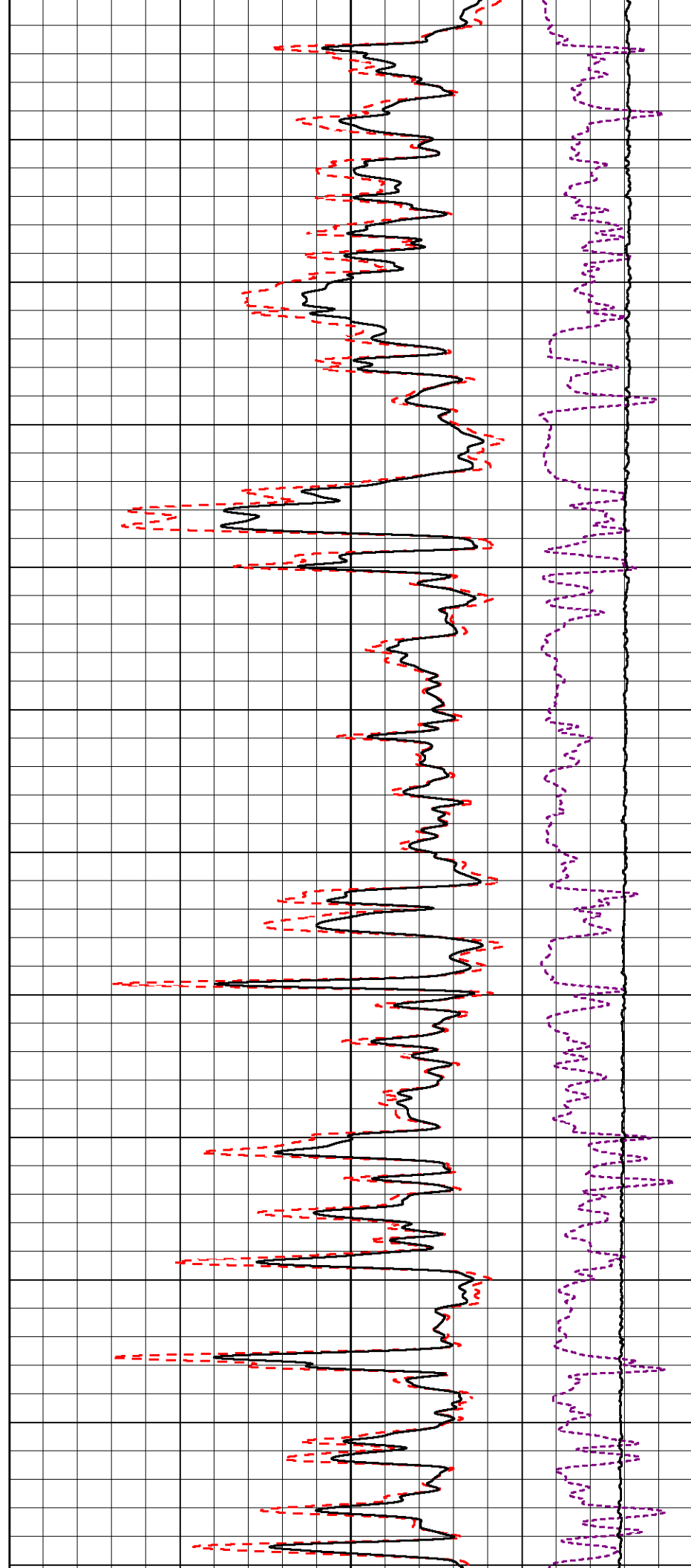
Database File: howell_sabin b 14.db
 Dataset Pathname: STKML/pass3.1
 Presentation Format: cdl
 Dataset Creation: Mon Sep 10 14:47:40 2018
 Charted by: Depth in Feet scaled 1:600

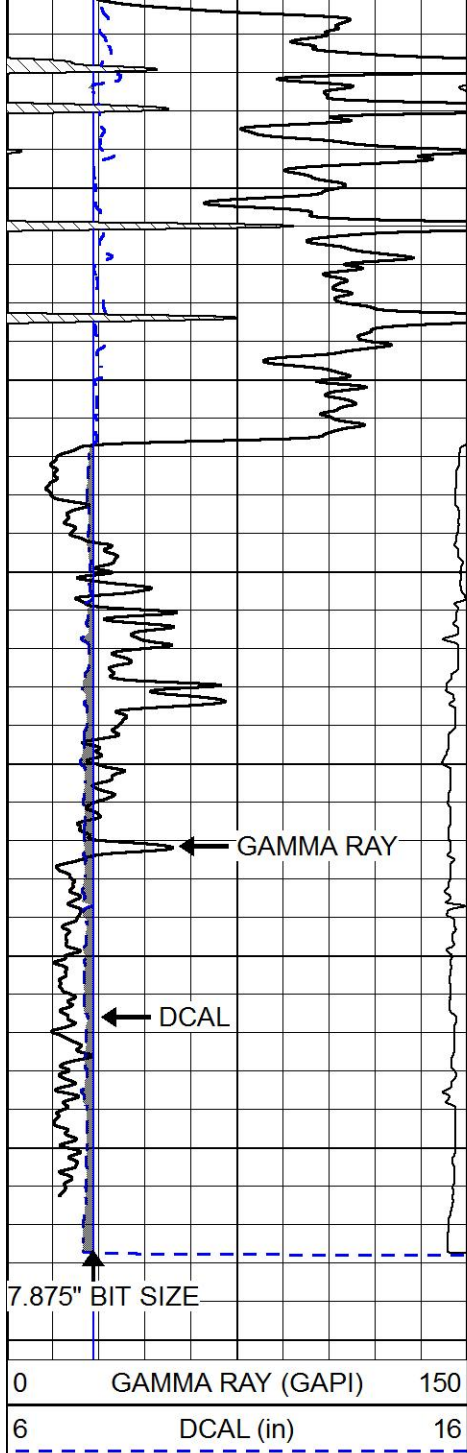
0	GAMMA RAY (GAPI)	150	COMPENSATED DENSITY (2.71 MA)	
6	DCAL (in)	16	30 (pu)	-10
-----			2	BULK DENSITY (g/cc)
			15000	LINE TENSION (lb)
			-0.25	CORRECTION (g/cc)
				0.25



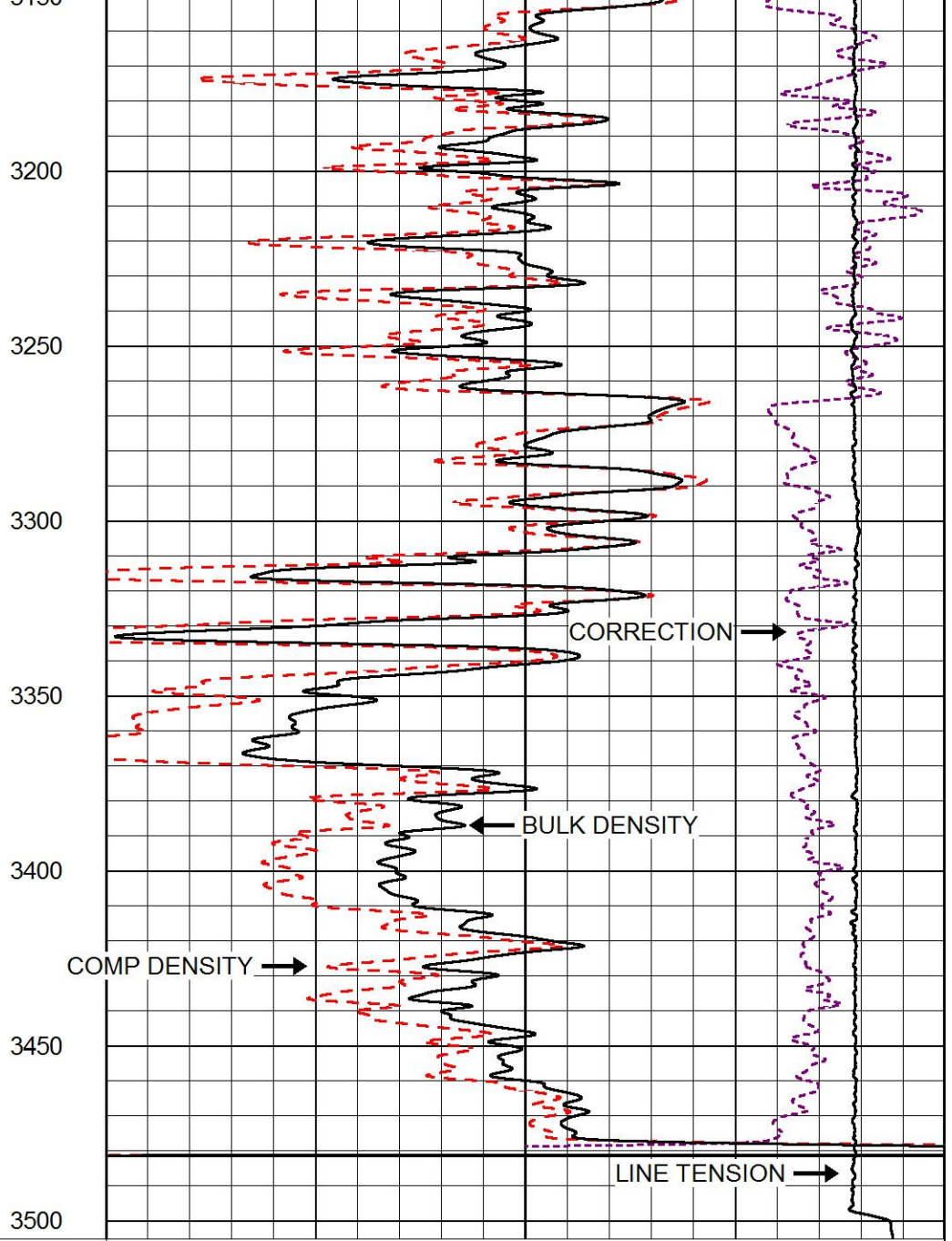


2650
2700
2750
2800
2850
2900
2950
3000
3050
3100
3150





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



30	COMPENSATED DENSITY (2.71 MA)	(pu)	-10
2	BULK DENSITY (g/cc)		3
15000	LINE TENSION (lb)		0
-0.25	CORRECTION (g/cc)		0.25



MAIN PASS

Database File	howell_sabin b 14.db
Dataset Pathname	STKML/pass3.1
Presentation Format	cnldspec
Dataset Creation	Mon Sep 10 14:47:40 2018
Charted by	Depth in Feet scaled 1:240

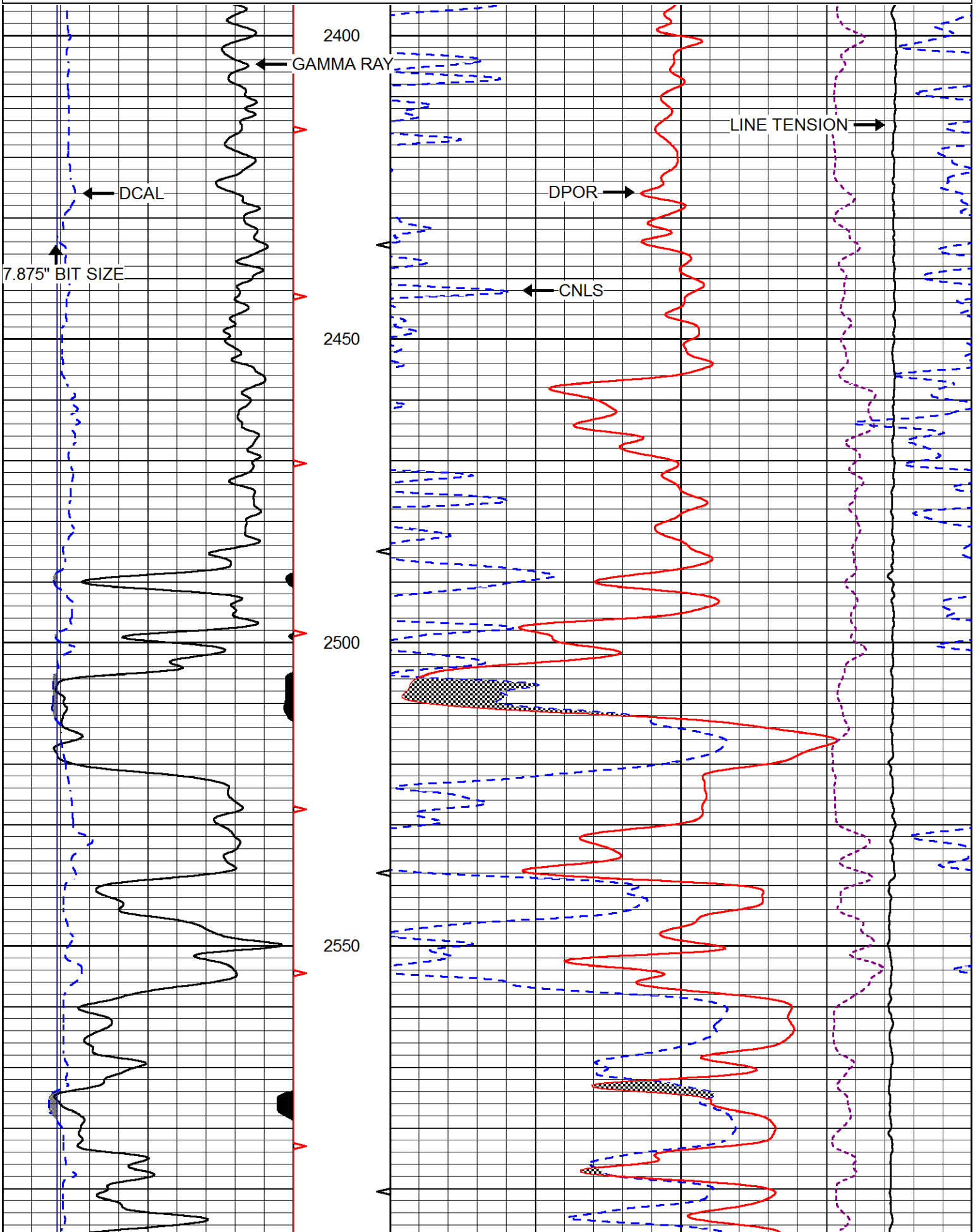
0	GAMMA RAY (GAPI)	150	30	CNI S (pu)	-10
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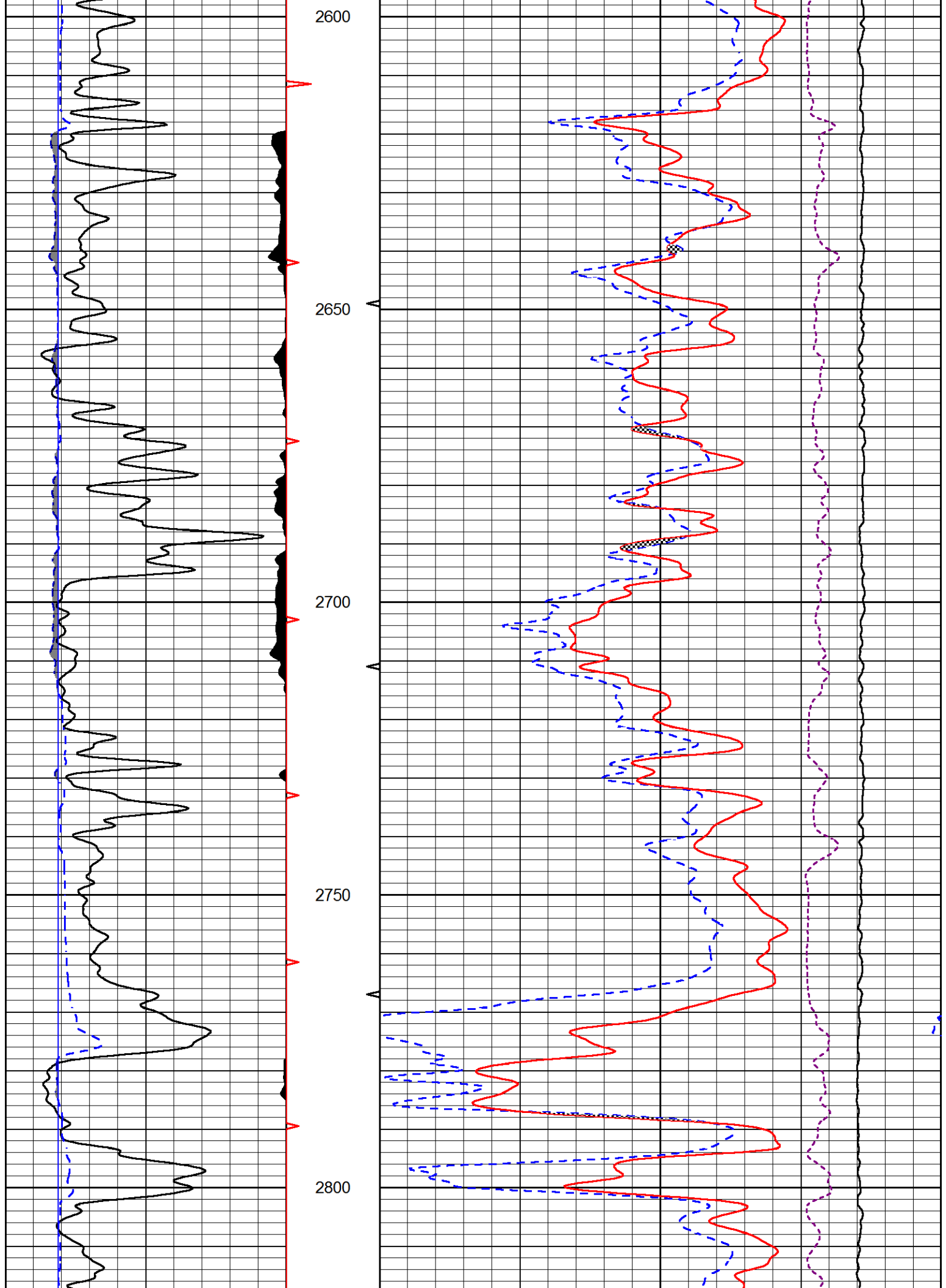
6 DCAL (in) 16

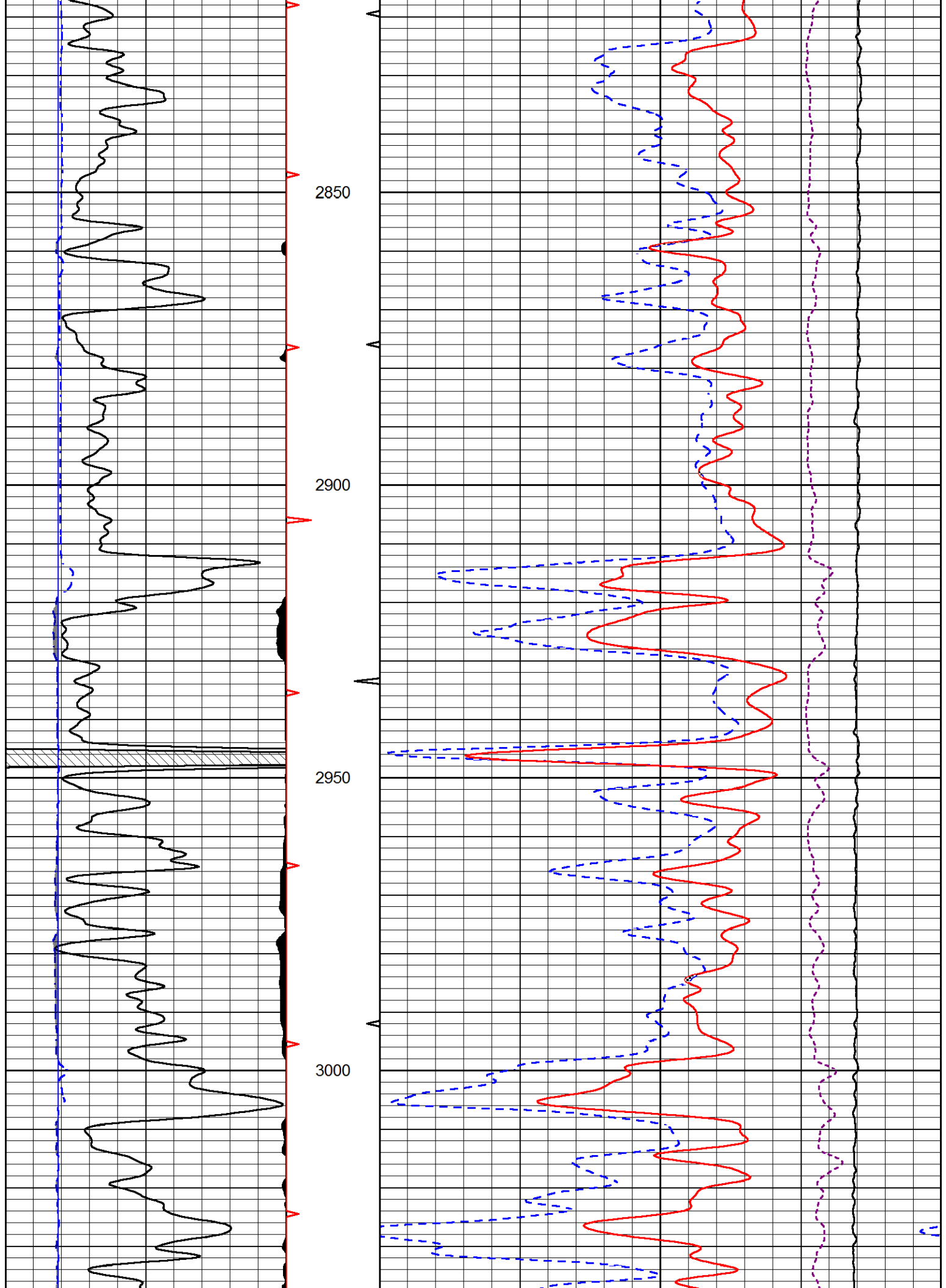
30 DPOR (pu) -10

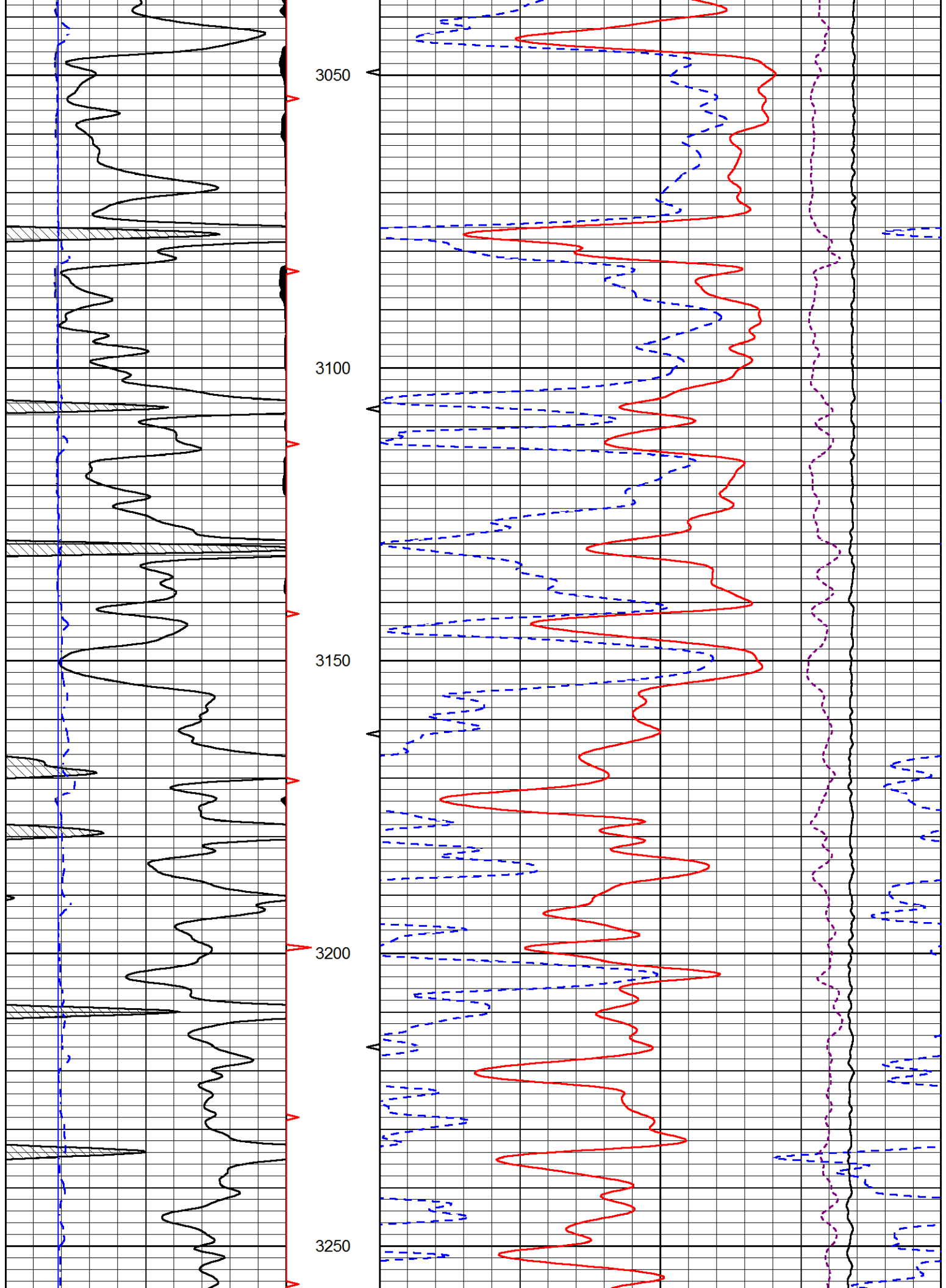
10000 LINE TENSION (lb) 0

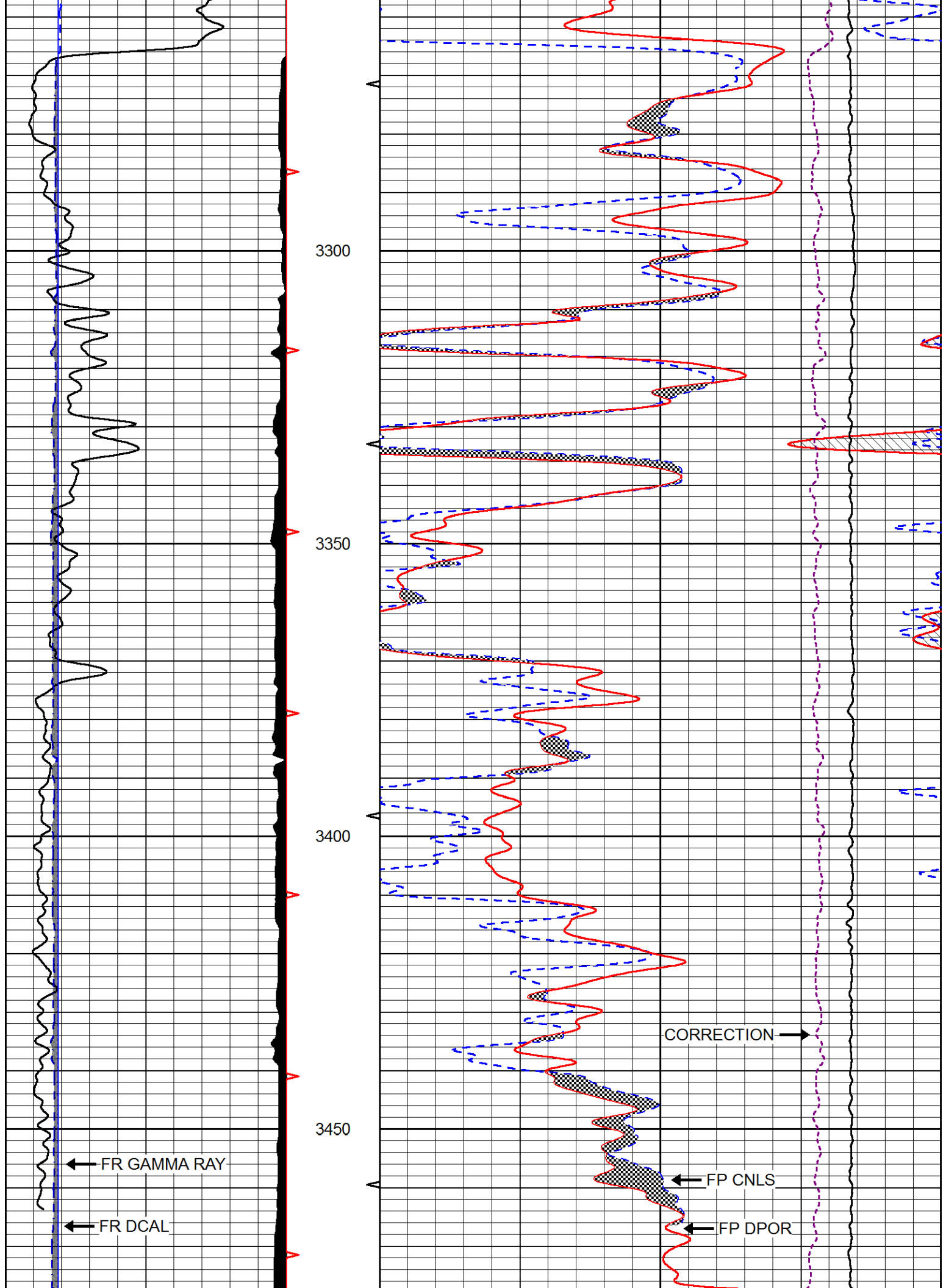
-0.75 CORRECTION (g/cc) 0.75

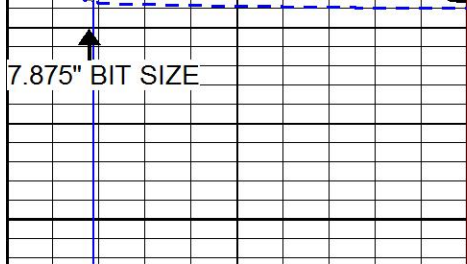




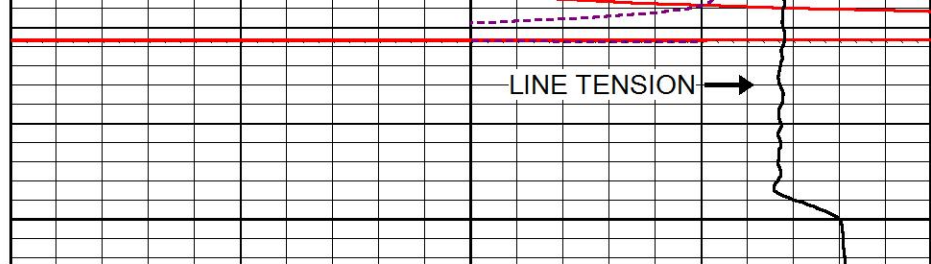








3500



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



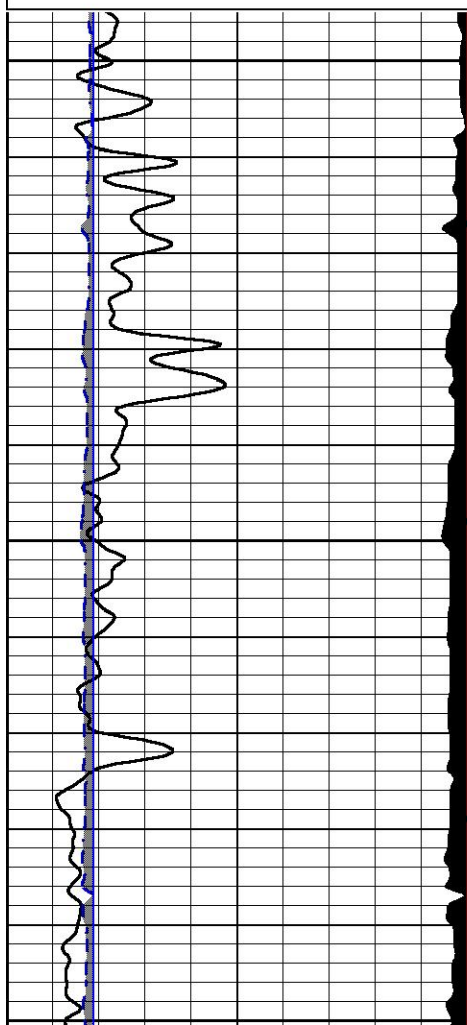
REPEAT SECTION

Database File howell_sabin b 14.db
 Dataset Pathname STKML/pass2.1
 Presentation Format cndlspec
 Dataset Creation Mon Sep 10 14:33:23 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

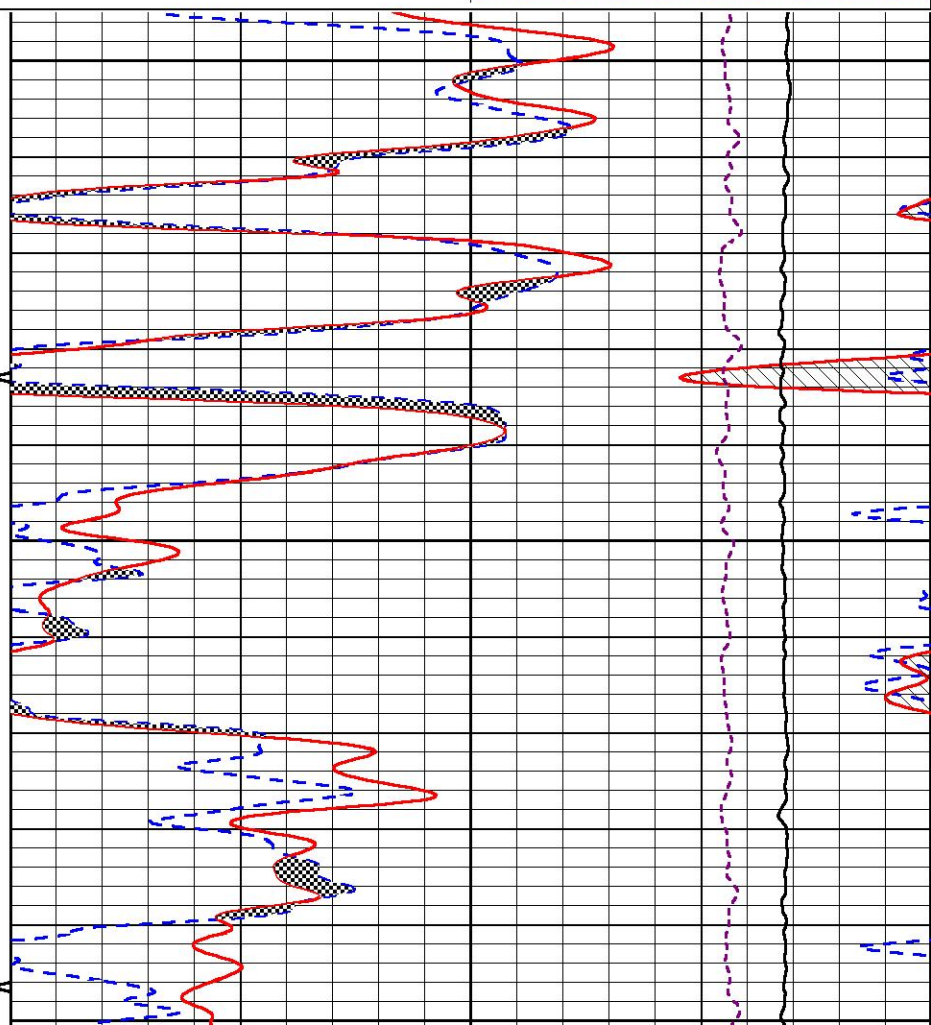
10000	LINE TENSION (lb)	0
-0.75	CORRECTION (g/cc)	0.75

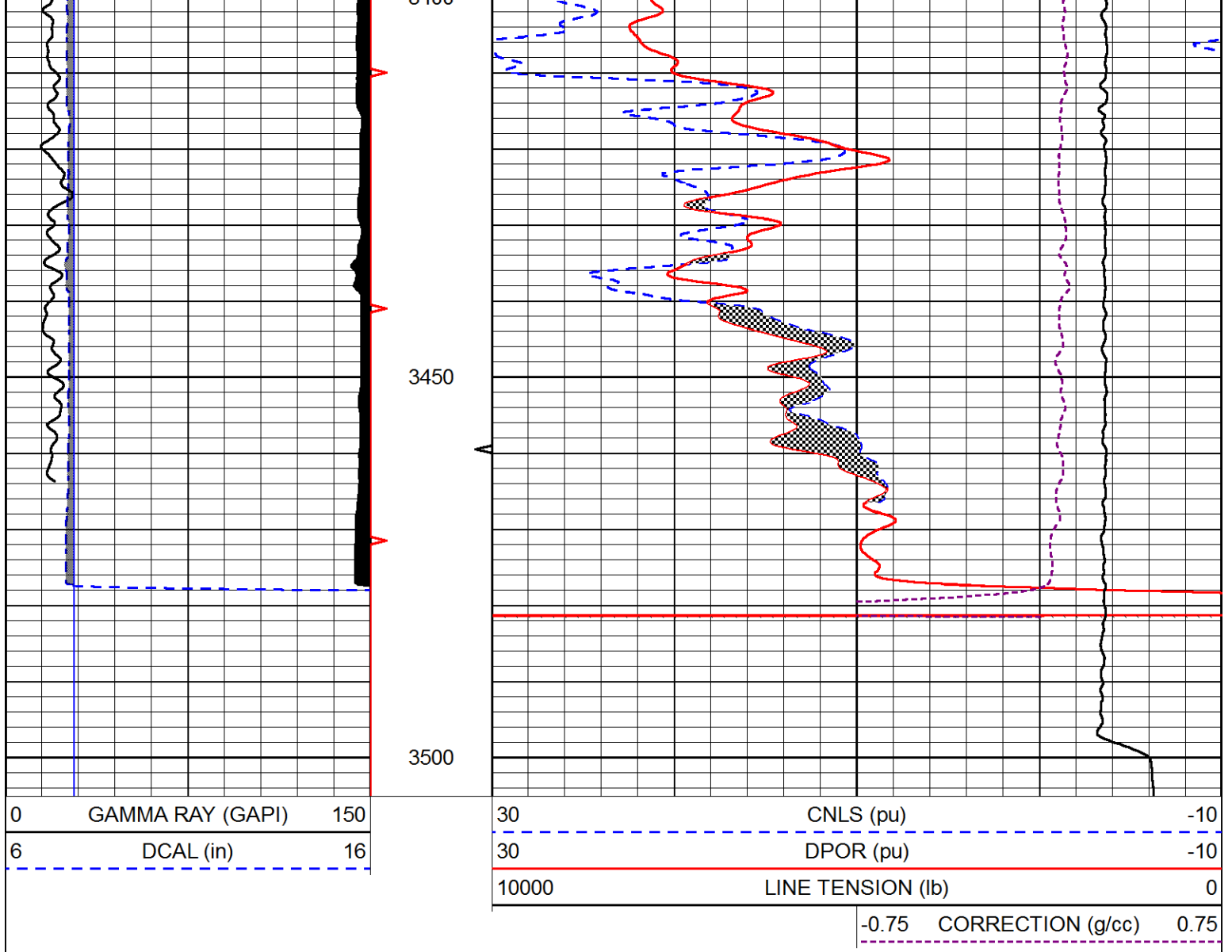


3300

3350

3400





Calibration Report

Database File howell_sabin b 14.db
 Dataset Pathname STKML/pass2.4
 Dataset Creation Mon Sep 10 14:41:43 2018

Dual Induction Calibration Report

Serial-Model: 967 (HT)-PSI HIGH TEMP
 Calibration Performed: Sun Aug 26 00:41:13 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.800	mmho/m	0.565	-20.000
Medium	0.000	1348.000	142.000	255.800	mmho/m	0.390	-40.000

Microlog Calibration Report

Serial-Model: PSI-01-PSIML
 Performed: Sat Sep 08 05:17:35 2018

Readings		References		Results	
Zero	Cal	Zero	Cal	m	b

Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	17000.0000	-0.8000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	20000.0000	-0.6000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-65.9250

Compensated Density Calibration Report

Serial-Model: 96-916-M&W
Source / Verifier: 16955B / 2ci
Master Calibration Performed: Thu Aug 30 10:33:27 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	8943.64	10054.60	cps
Aluminum	2.650	g/cc	1595.61	6242.82	cps
Spine Angle = 74.54			Density/Spine Ratio = 0.500		
	Size		Reading		
Small Ring	6.00	in	1.75		
Large Ring	16.00	in	1.38		

Compensated Neutron Calibration Report

Serial Number: 207-MW
Tool Model: M&W
Calibration Performed: FRI AUG 24 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: Fri Aug 24 11:16:10 2018

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.6000 GAPI/cps



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