



PIONEER
Pioneer Energy Services

**DUAL COMPENSATED
POROSITY /
MICRO LOG**

Company **RENEGADE OIL & GAS**
Well **STATE OF COLORADO #3-33**
Field **BRAVE**
County **ARAPAHOE**
State **COLORADO**

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Location: API #: 05-005-07364-00
600' FNL & 720' FWL
SEC 33 TWP 5S RGE 64W
Permanent Datum **GROUND LEVEL** Elevation **6067'**
Log Measured From **KELLY BUSHING**
Drilling Measured From **KELLY BUSHING**
Other Services
DIL
Elevation
K.B. 6077'
D.F. N/A
G.L. 6067'

Date **10/3/2018**

Run Number **ONE**
Type Log **CNL / CDL / ML**
Depth Driller **8650'**
Depth Logger **8655'**
Bottom Logged Interval **8654'**
Top Logged Interval **5200'**
Type Fluid In Hole **CHEMICAL**
Salinity, PPM CL **300**
Density **9.2**
Level **FULL**
Max. Rec. Temp. F **163**
Operating Rig Time **4 HOURS**
Equipment -- Location **108 HAYS**
Recorded By **J. HENRICKSON**
Witnessed By **ED INGVE**

Borehole Record

Casing Record

Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0	2470'	8.625"	24#	0	2470'
TWO	7.875"	2470'	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.
SO# 657B

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: J. HENRICKSON
Operator:
Operator:
Operator:

This Log Record Was Witnessed By











Primary Witness: ED INGVE
Secondary Witness:
Secondary Witness:
Secondary Witness:

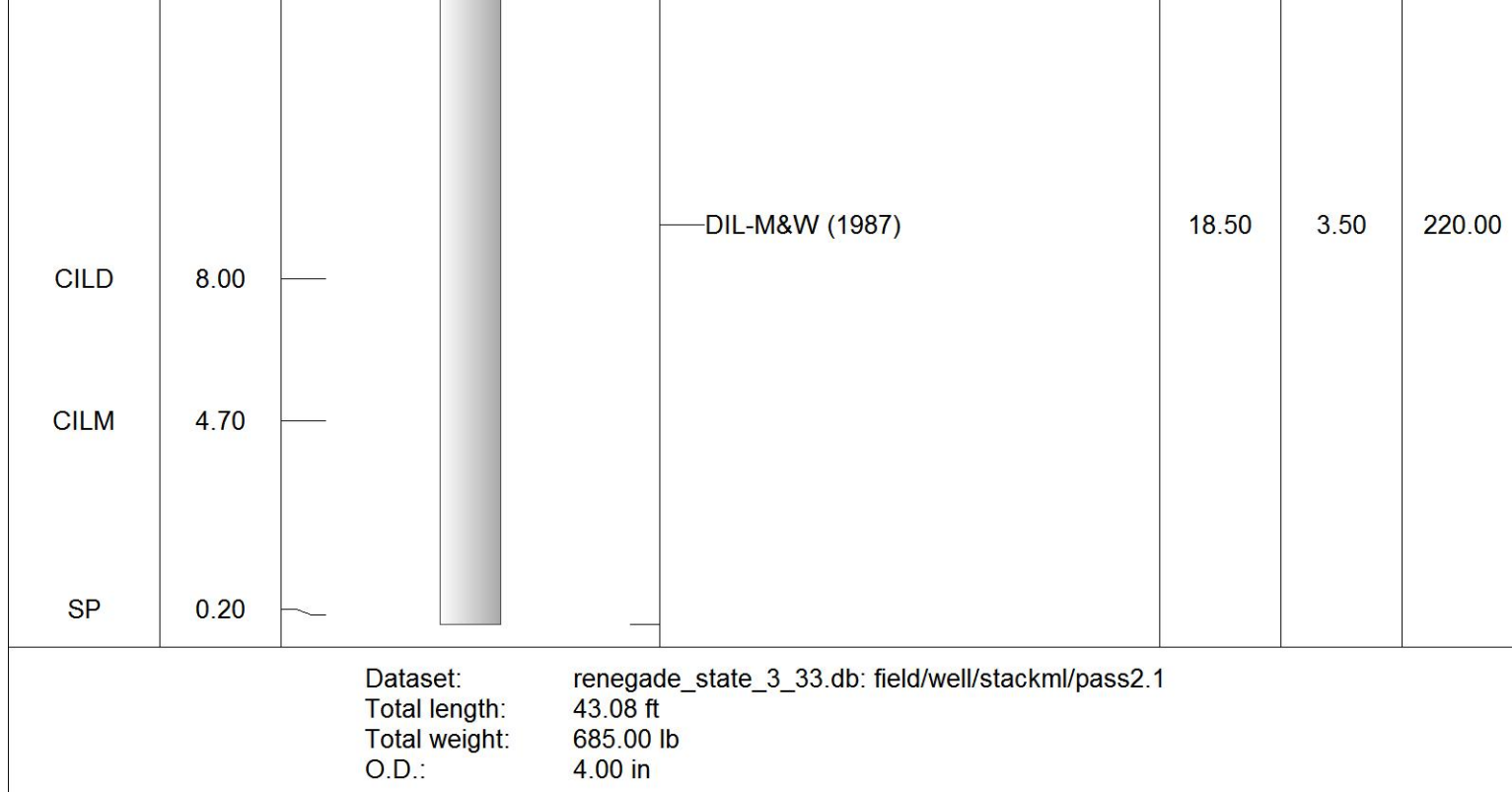
Top - 8072.00 ft

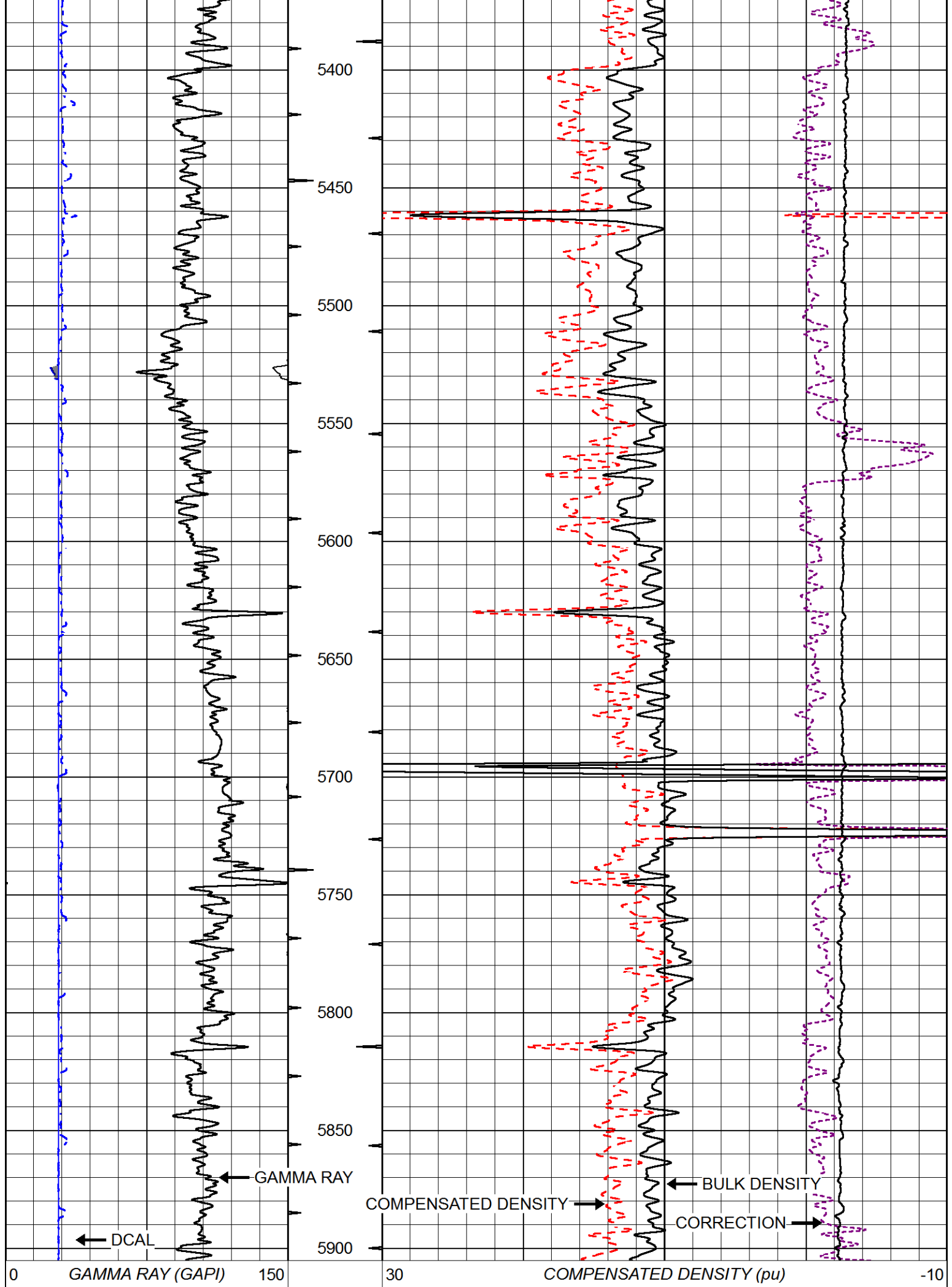
A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in	degF	in	in	g/cc		g/cc
	7.875	156	4.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m	mmho/m	mV	degF	Off	ft
		19	0	-124	0		8655

8072.00 ft - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in	degF	in	in	g/cc		g/cc
	7.875	156	4.5	0	1	2	2.65
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Sandstone	0	mmho/m	mmho/m	mV	degF	Off	ft
		19	0	-124	0		8655

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC	37.48		CNT-M&W (tk10-MW)	5.50	3.50	100.00
CNSSC	36.73					
LSD	28.43		CDL-M&W (934-5002)	8.50	4.00	250.00
DCAL	28.42					
SSD	27.93					
MCAL	19.83		ML-PSI STKBL ML (PSI-02)	7.58	4.00	65.00
MI	19.83		Stackable Microlog Tools			
MN	19.83					
RLL3	15.80					
RLL3F	15.79					





6	CALIPER (in)	16
<hr/>		

2	BULK DENSITY (g/cc)	3
15000	LINE TENSION (lb)	0
<hr/>		
-0.25	CORRECTION (g/cc)	0.25
<hr/>		

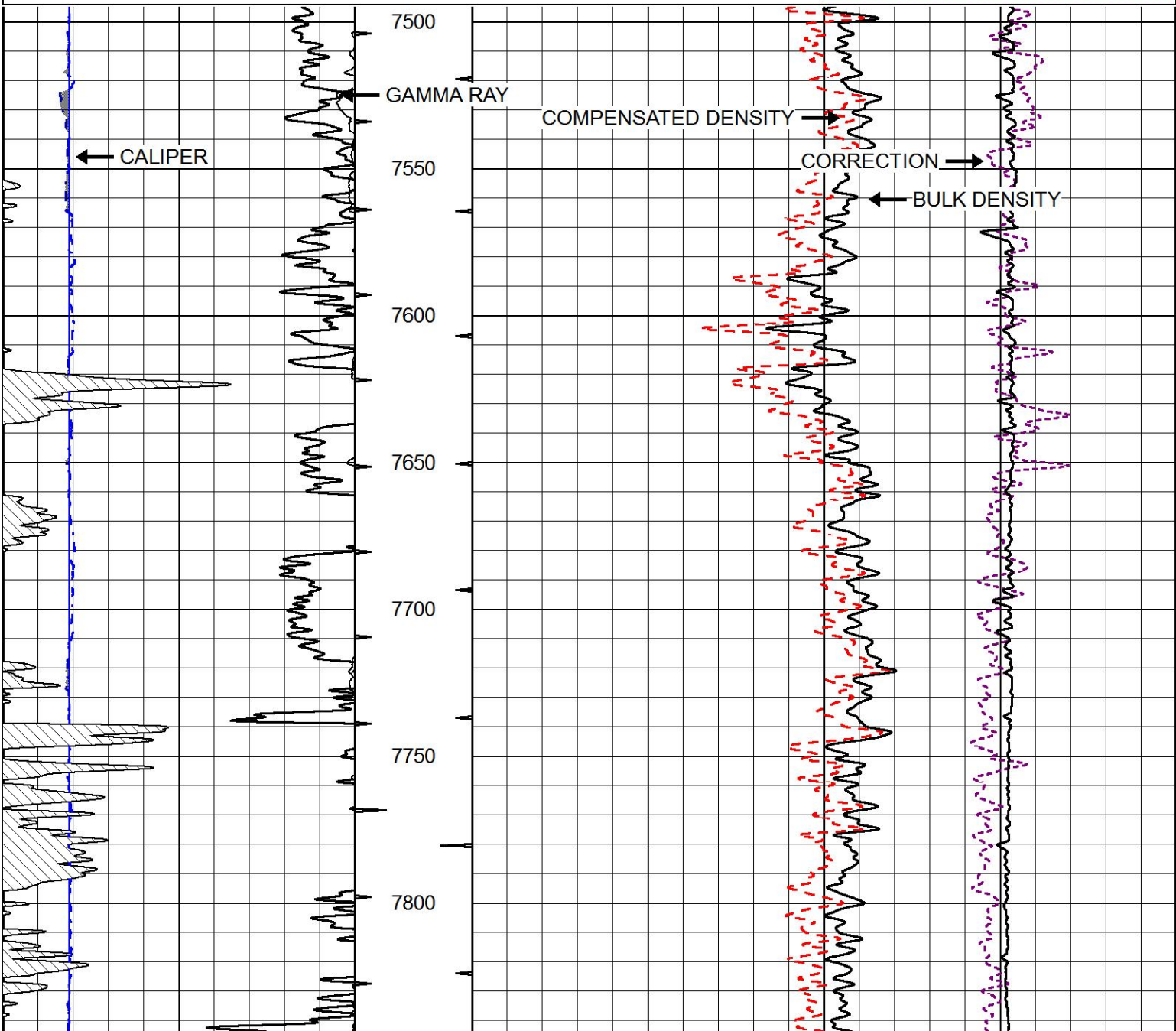


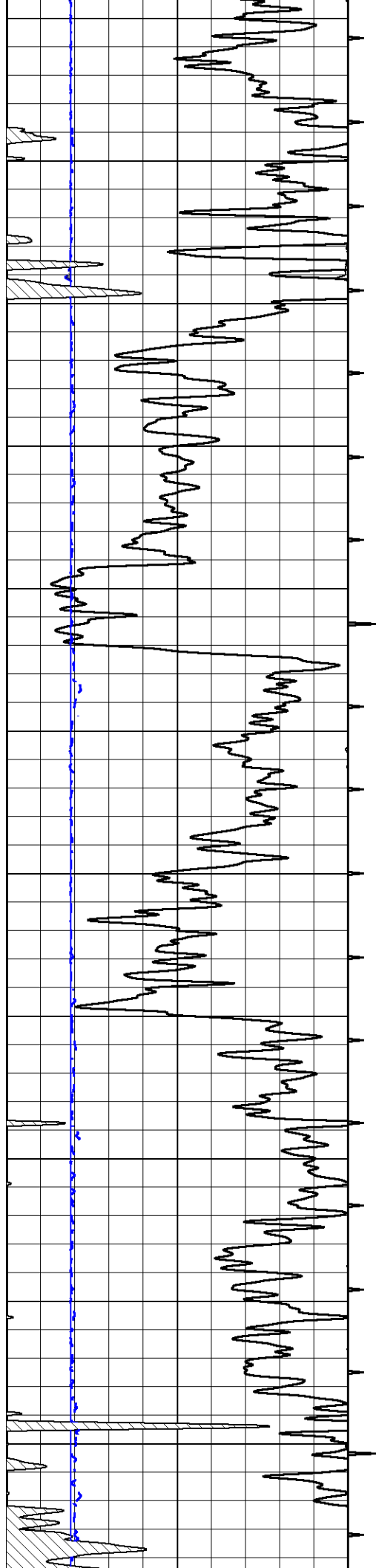
MAIN PASS

Database File	renegade_state_3_33.db
Dataset Pathname	stackml/pass2.1
Presentation Format	cdl
Dataset Creation	Wed Oct 03 05:10:29 2018
Charted by	Depth in Feet scaled 1:600

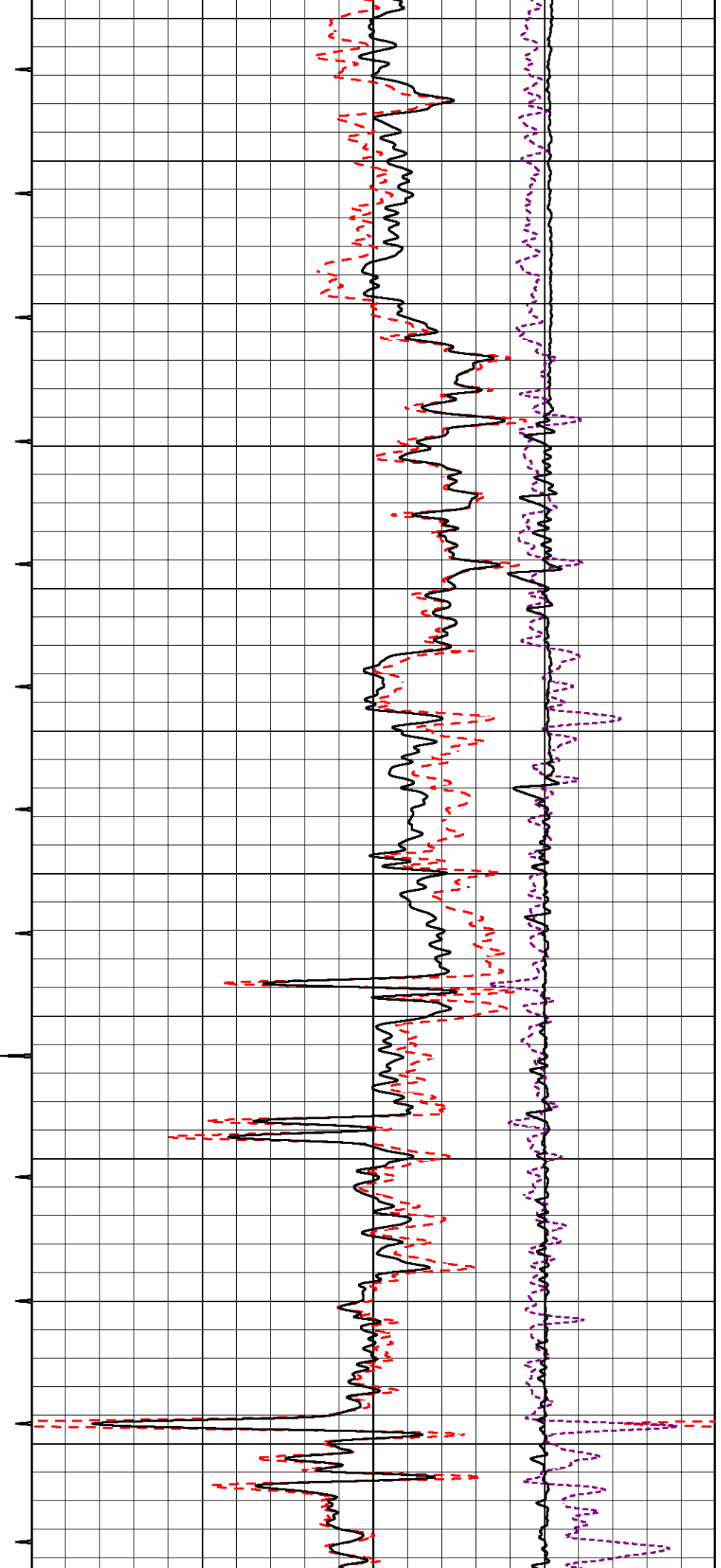
0	GAMMA RAY (GAPI)	150
6	CALIPER (in)	16
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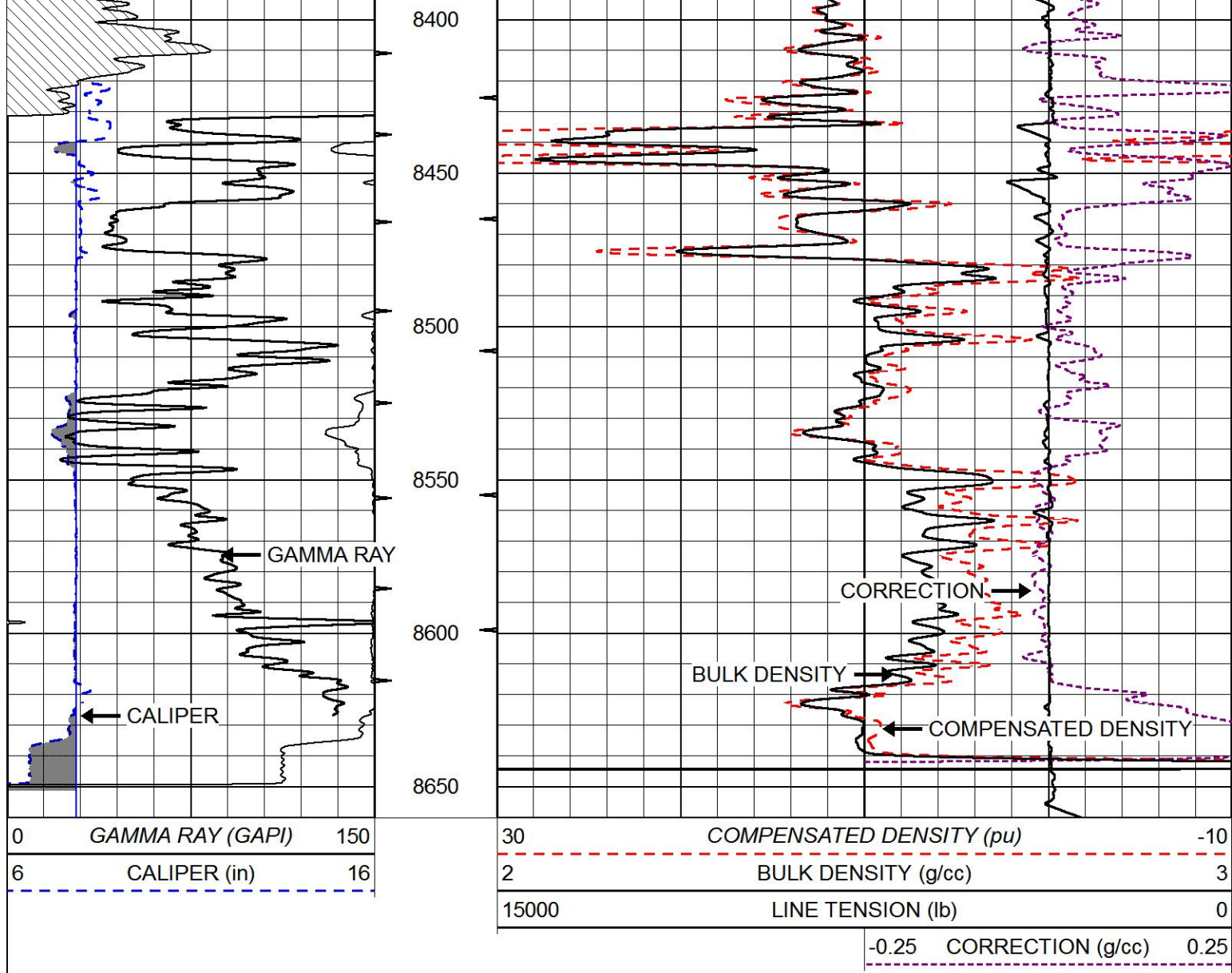
30	COMPENSATED DENSITY (pu)	-10
2	BULK DENSITY (g/cc)	3
15000	LINE TENSION (lb)	0
<hr/>		
-0.25	CORRECTION (g/cc)	0.25
<hr/>		






7850
7900
7950
8000
8050
8100
8150
8200
8250
8300
8350







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MAIN PASS

Database File: renegade_state_3_33.db
 Dataset Pathname: stackml/pass2.1
 Presentation Format: cnlcdlml
 Dataset Creation: Wed Oct 03 05:10:29 2018
 Charted by: Depth in Feet scaled 1:240

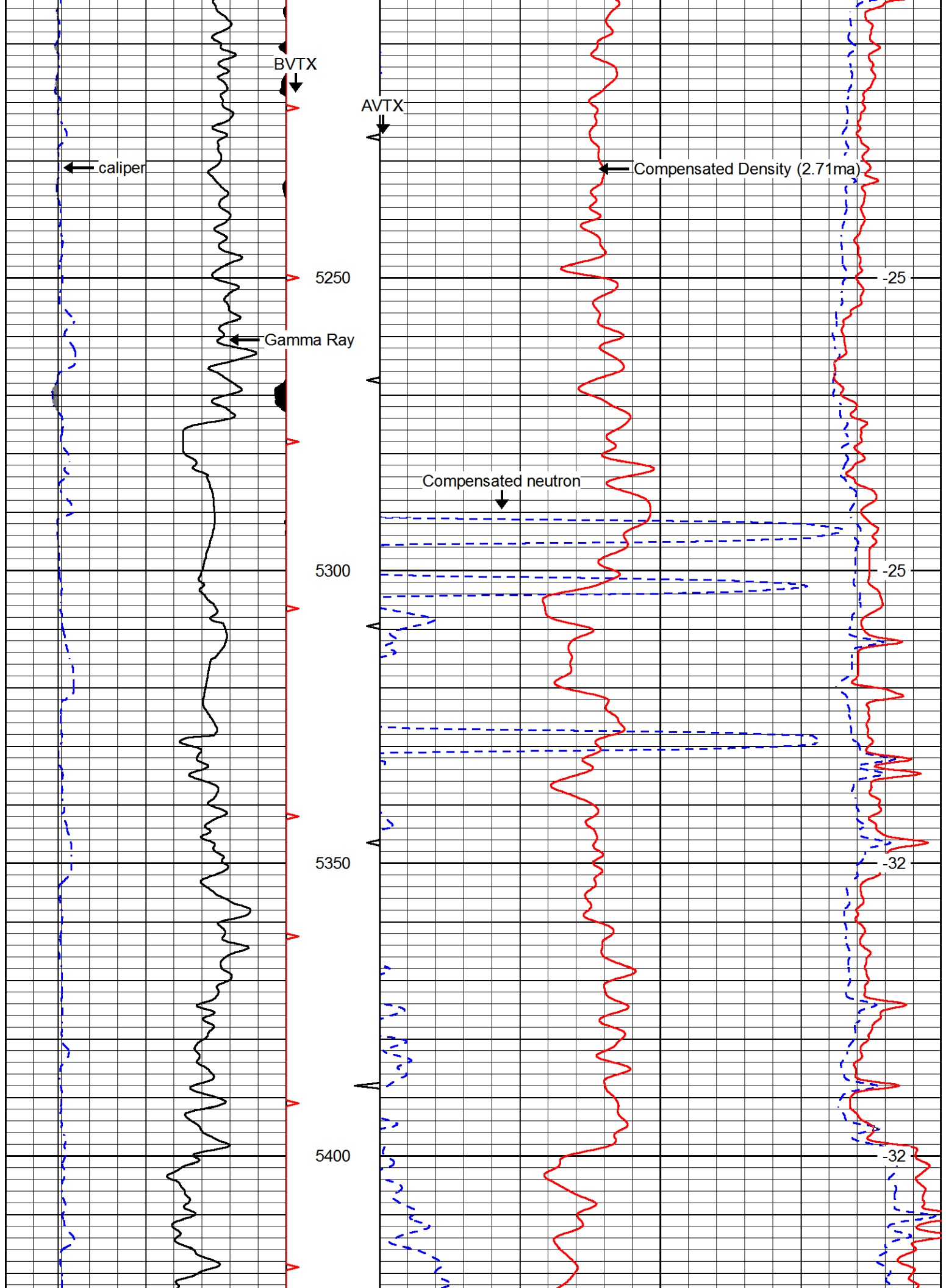
0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
6	Bit Size	16

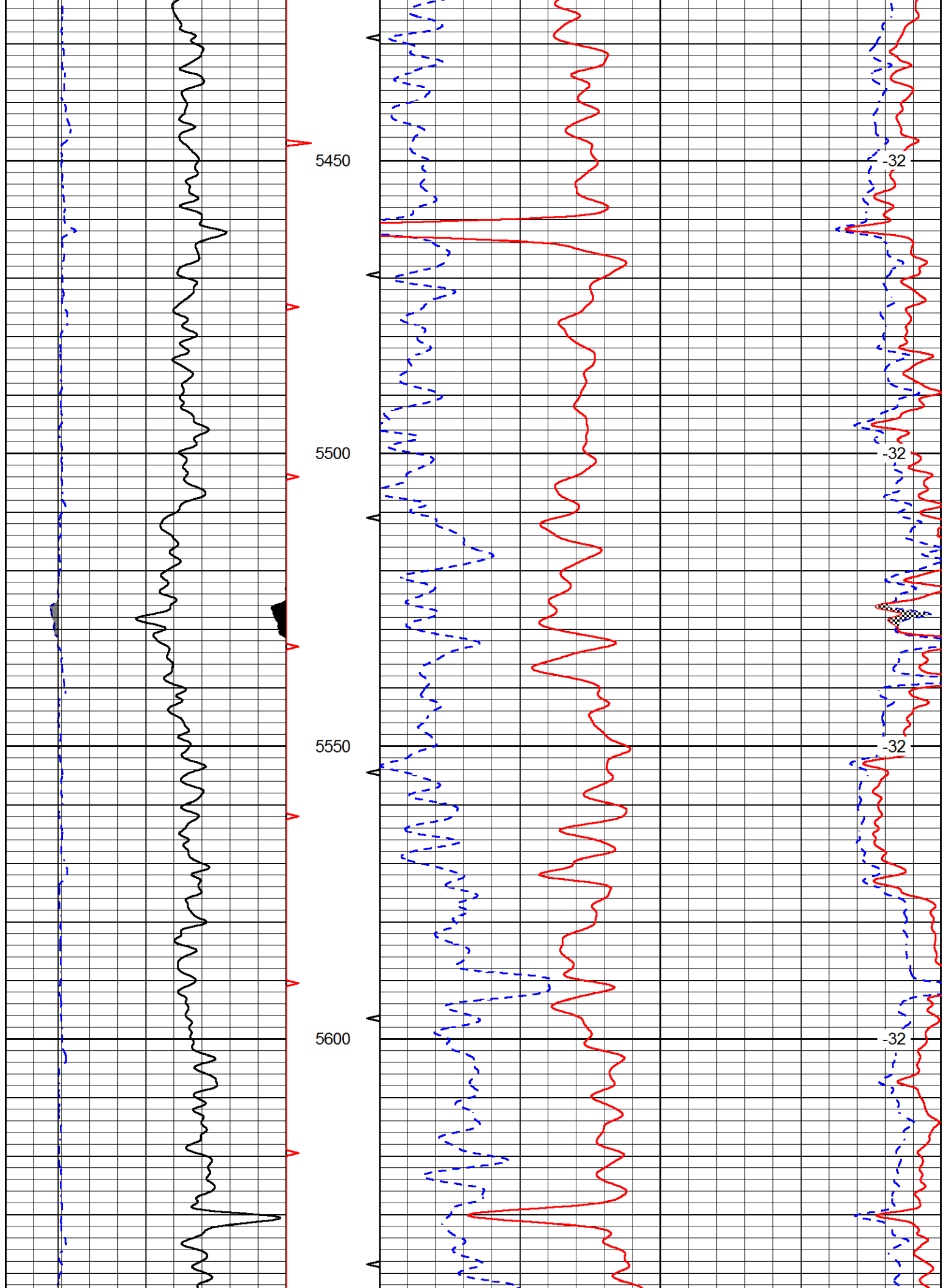
30	CNPOR (pu)	-10
30	Compensated Density (2.71ma) (pu)	-10

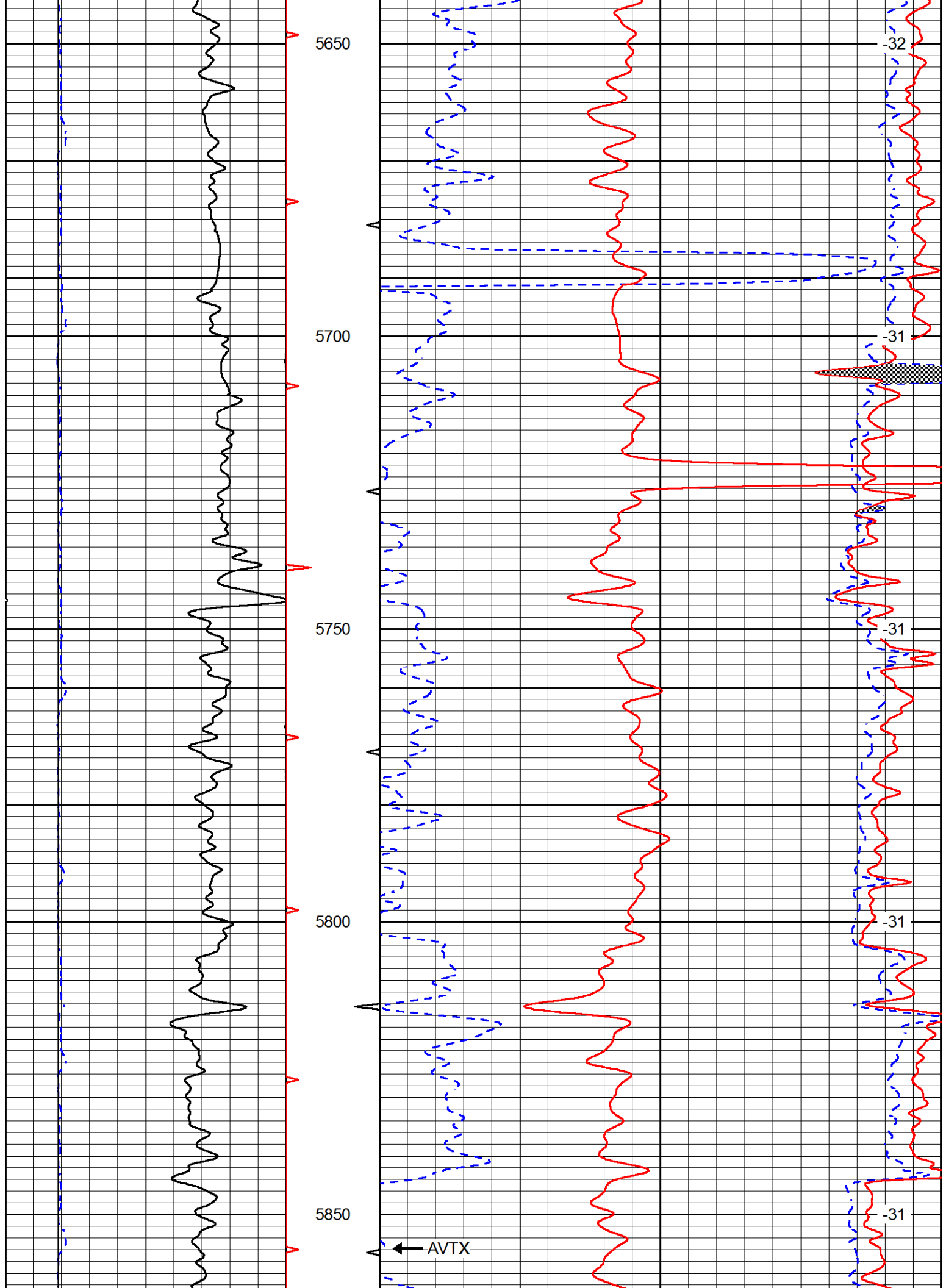
0	Micro Normal (Ohm-m)	20
0	Micro Inverse (Ohm-m)	20

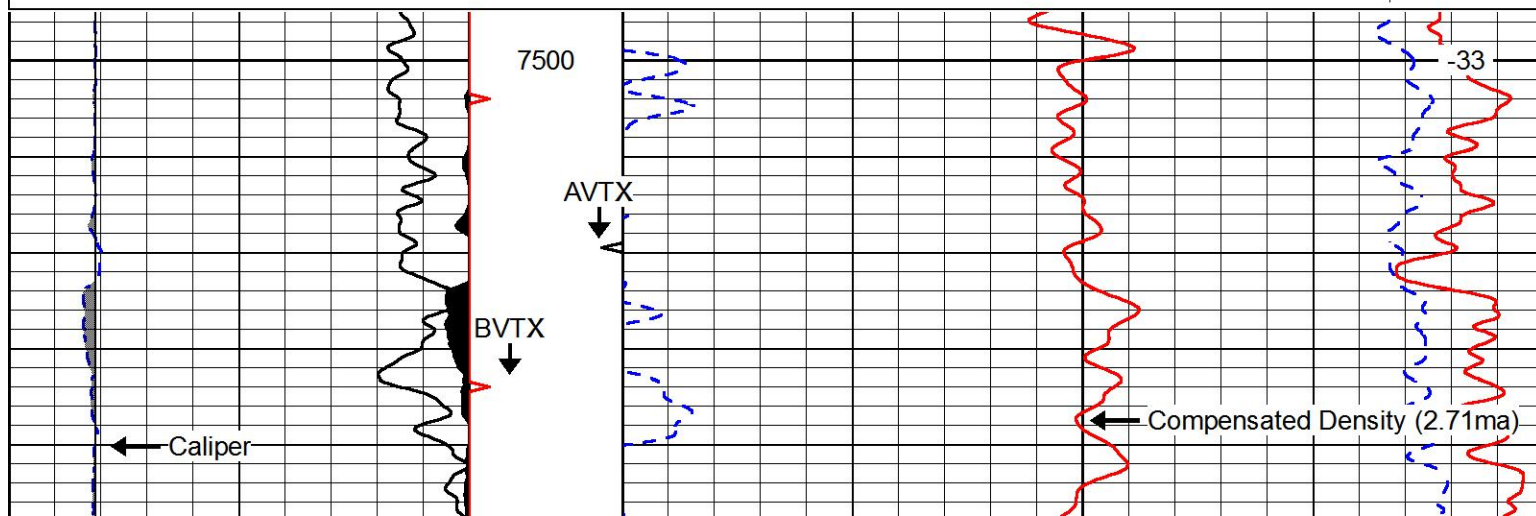
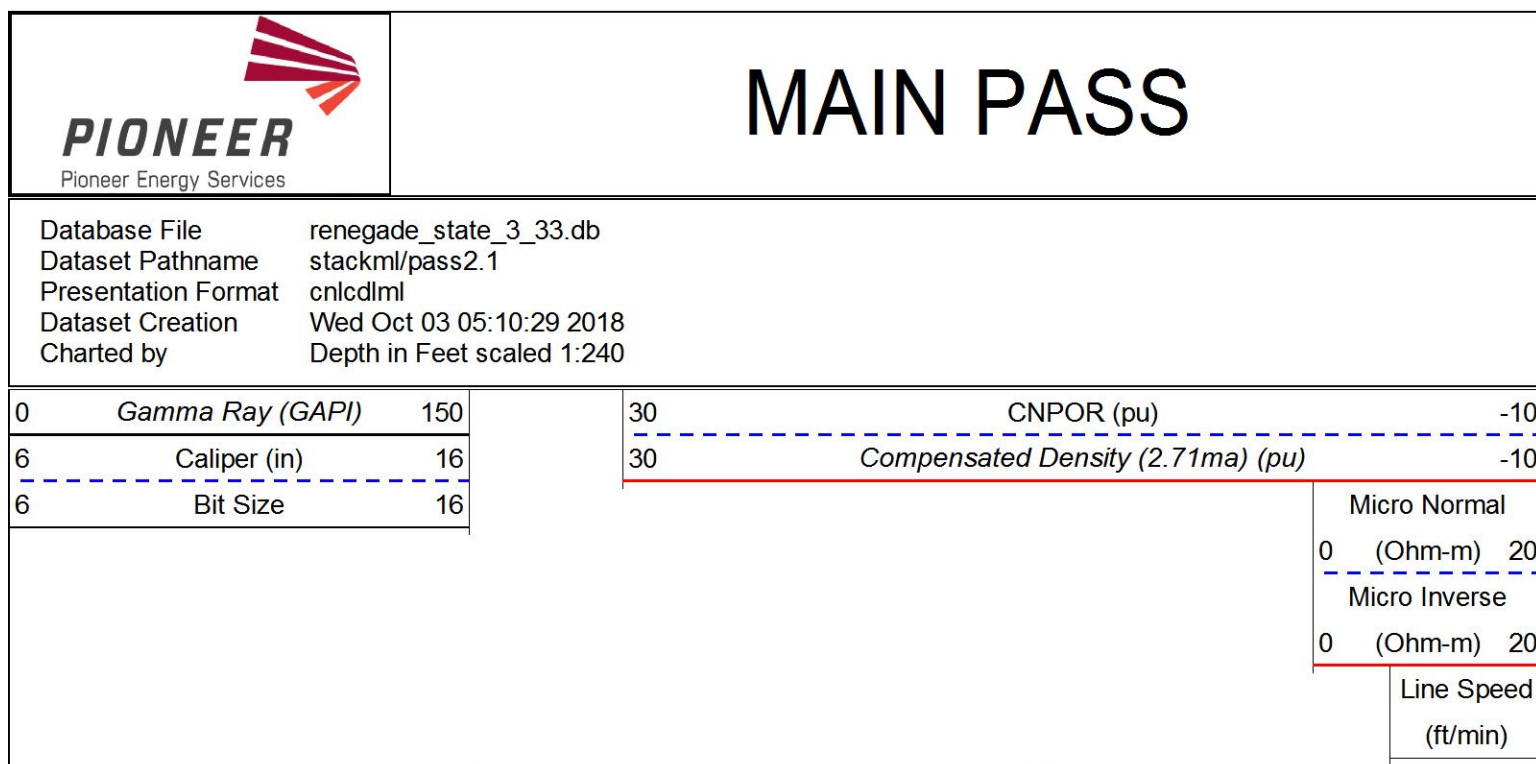
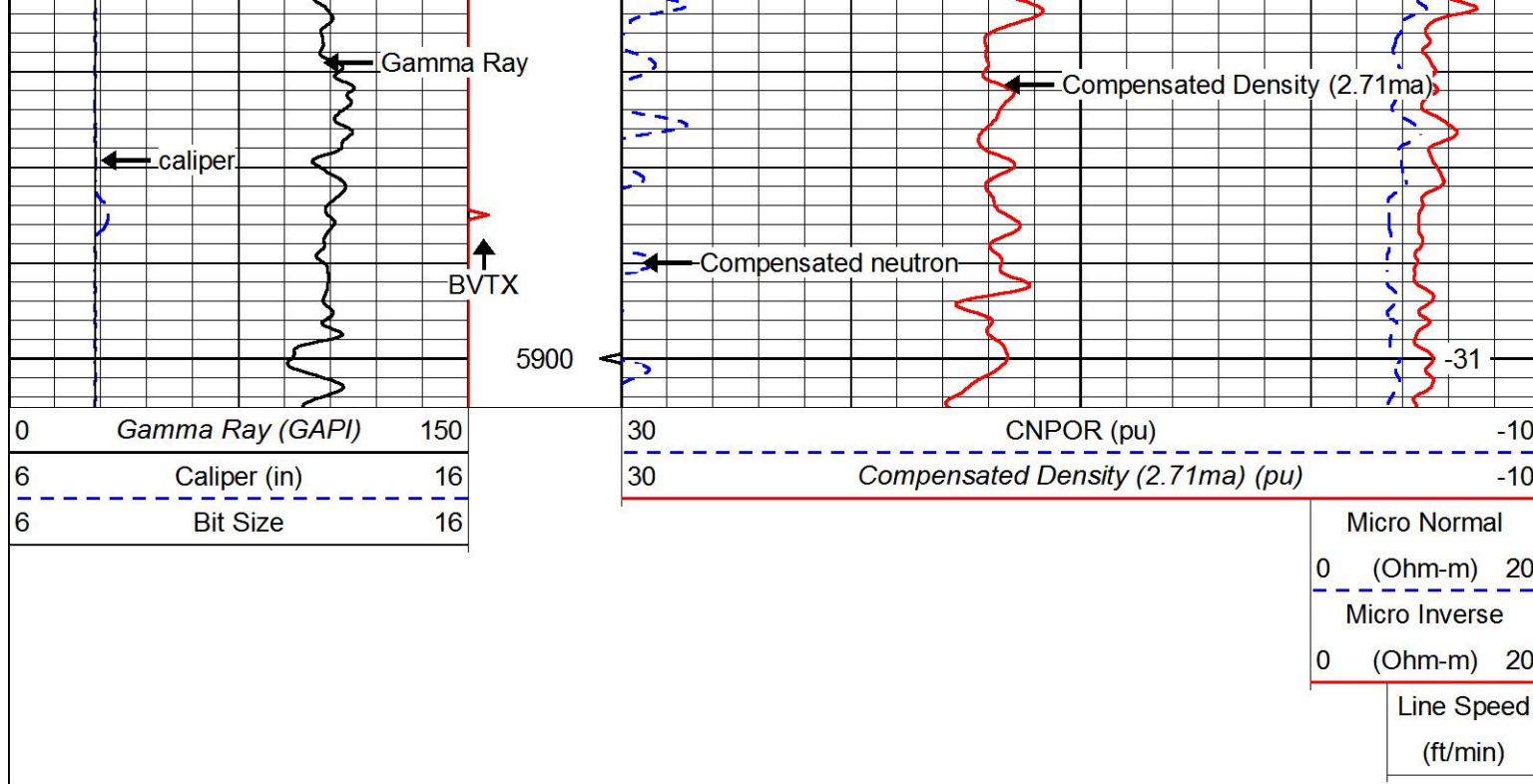
5200		
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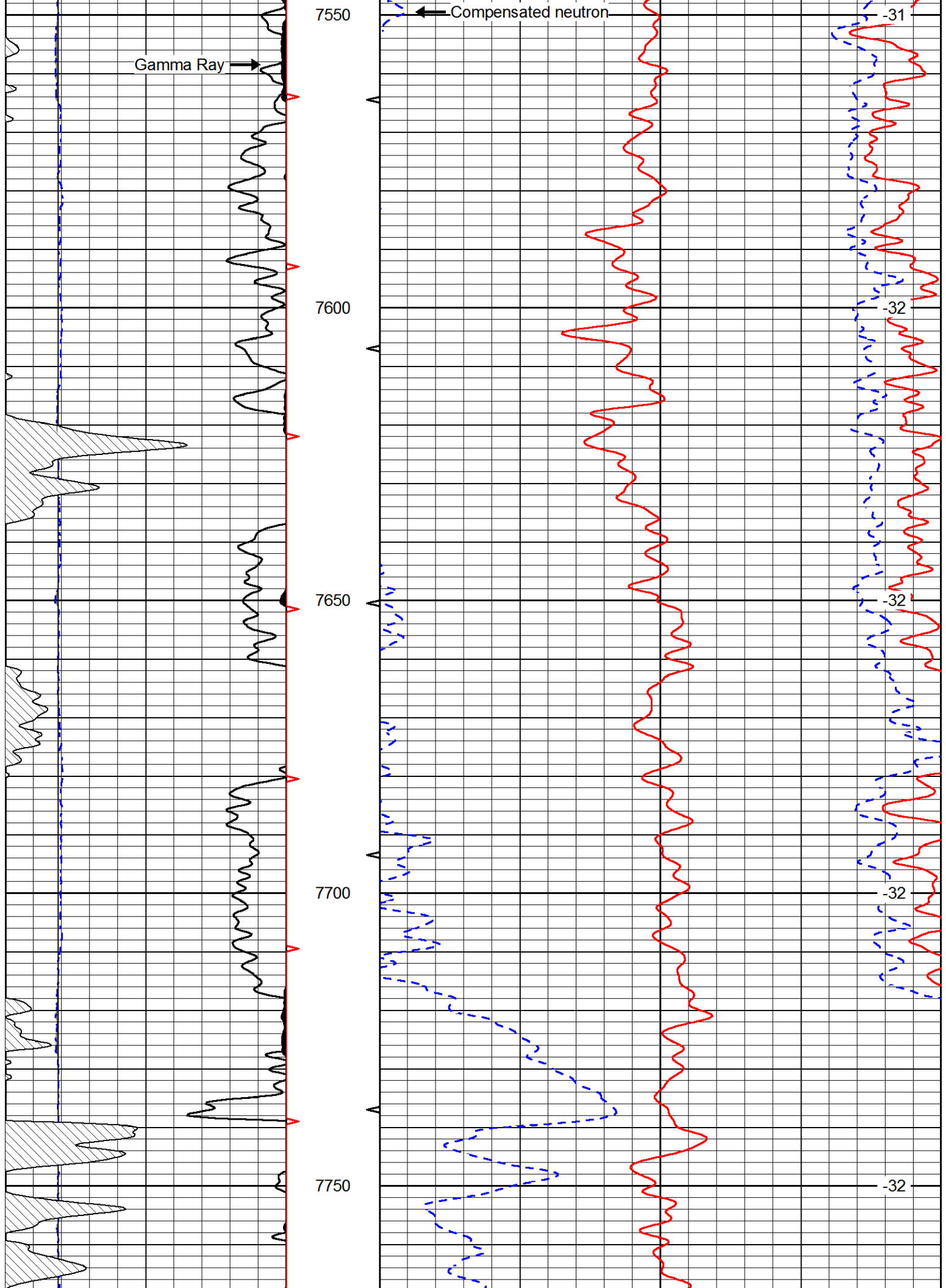
	Line Speed (ft/min)	-25
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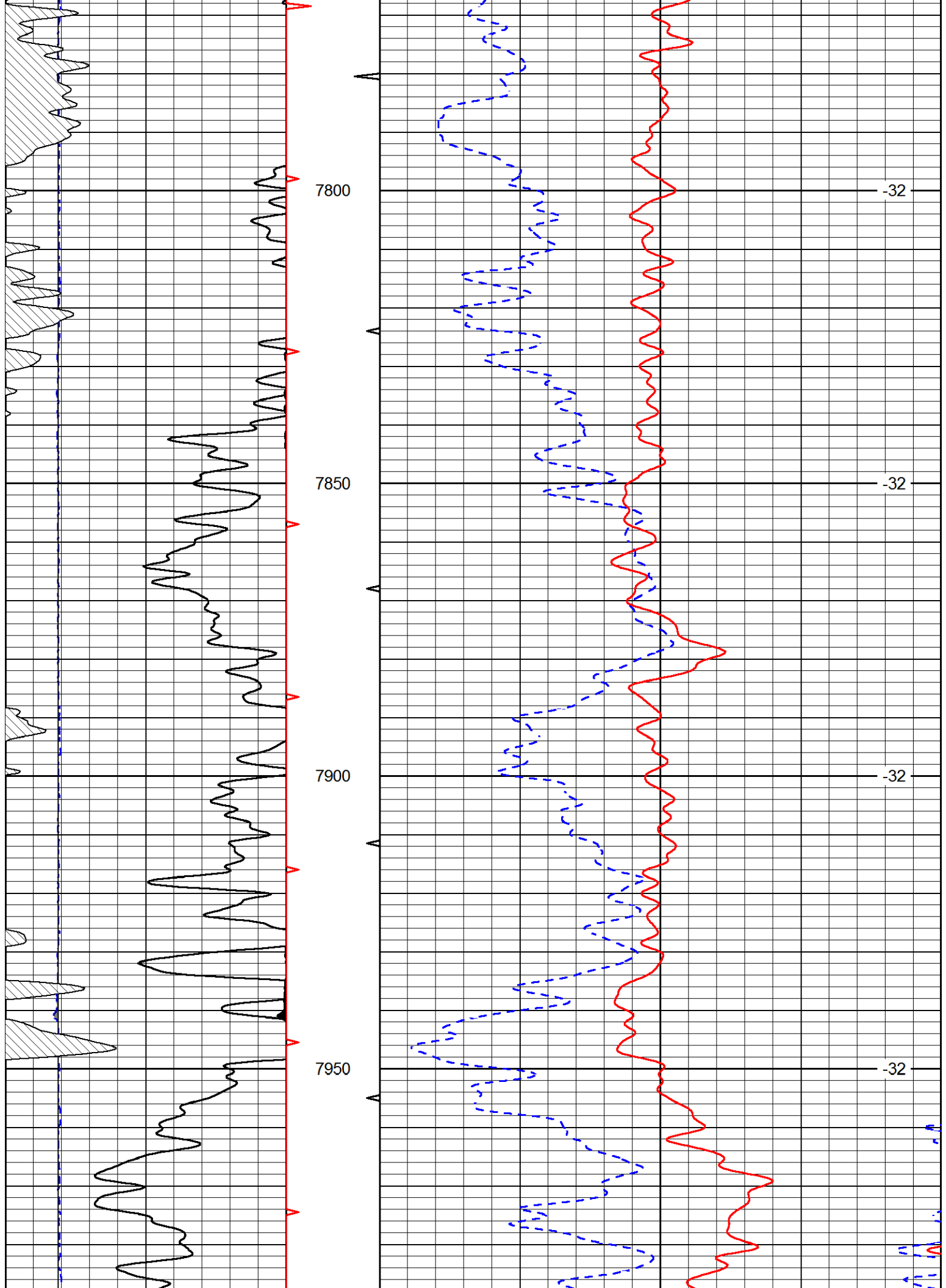


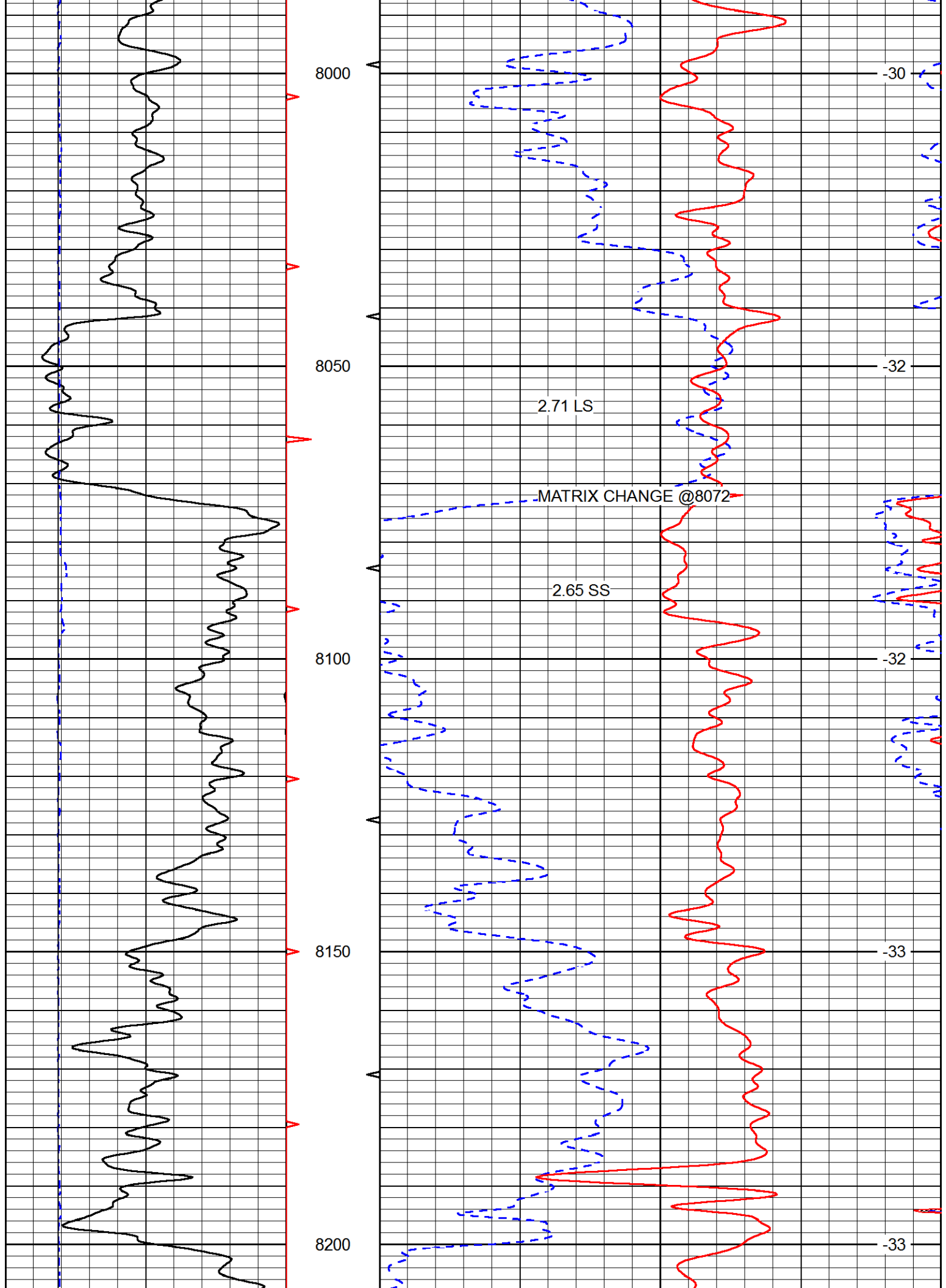


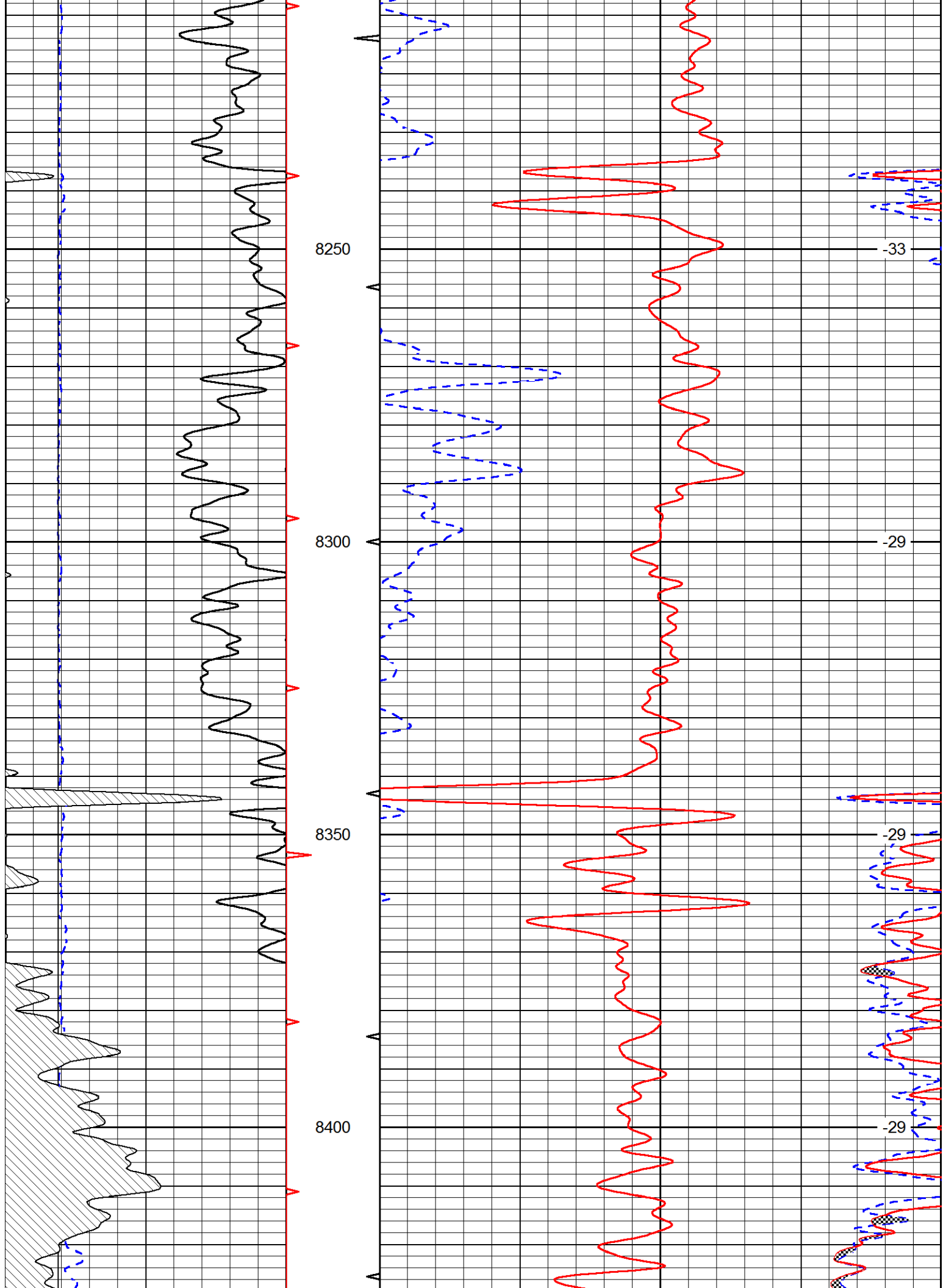


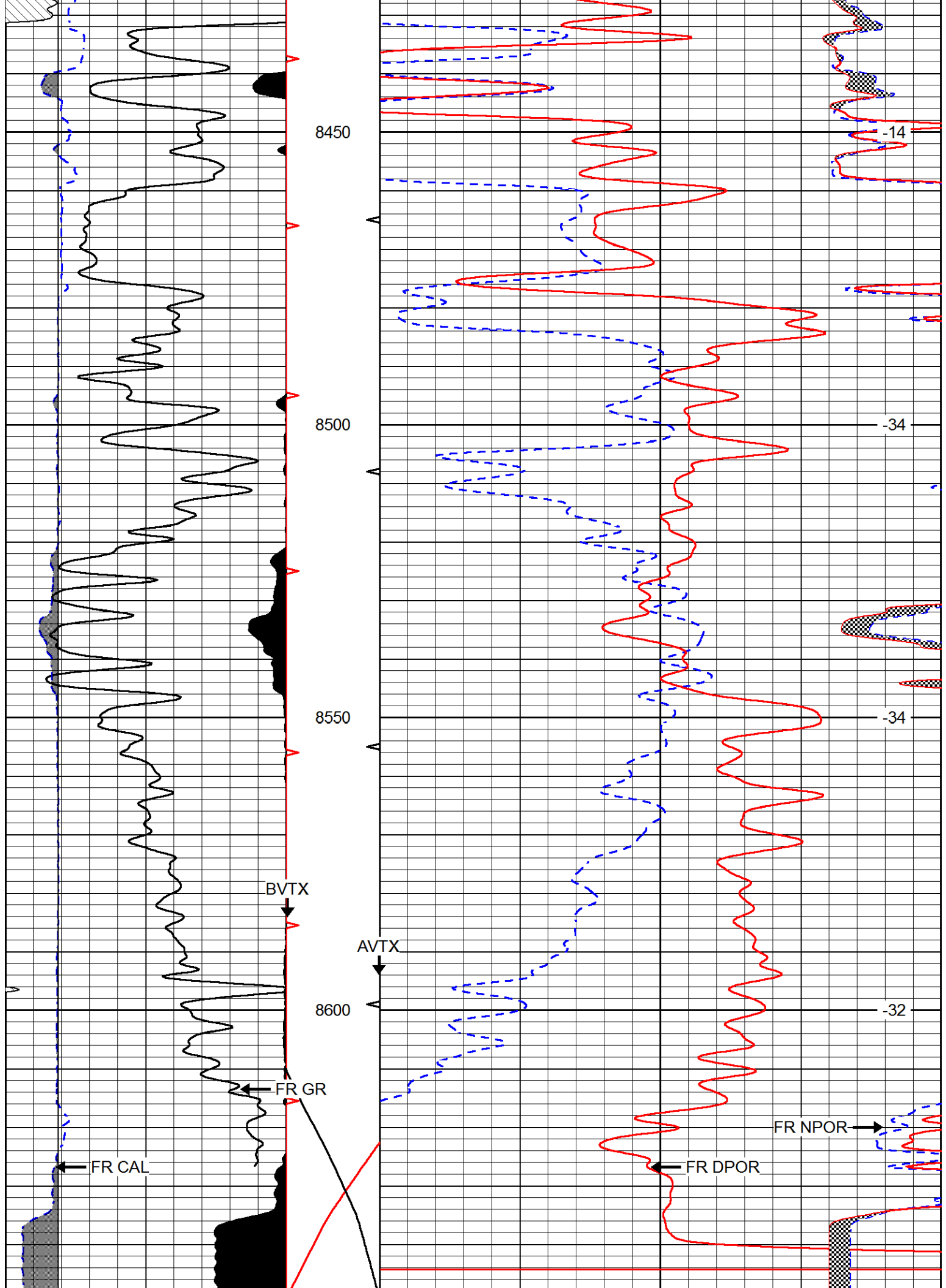













	Size		Reading	
Small Ring	4.00	in	1.16	
Large Ring	16.00	in	1.01	
Compensated Neutron Calibration Report				
		Serial Number:	tk10-MW	
		Tool Model:	M&W	
		Calibration Performed:	Wed Nov 16 11:21:36 2016	
Detector	Readings		Target	Normalization
Short Space	6240.00	cps	1000.00 cps	1.6025
Long Space	460.00	cps	1000.00 cps	1.9500
Gamma Ray Calibration Report				
Serial Number:		89-M&W		
Tool Model:		M&W		
Calibration Performed:		Tue Apr 11 17:08:01 2017		
Calibrator Value:	1000.0	GAPI		
Background Reading:	0.0	cps		
Calibrator Reading:	6.2	cps		
Sensitivity:	0.5200	GAPI/cps		

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