



DUAL COMP POROSITY LOG

Company AMERICAN PATRIOT OIL, LLC
 Well APO #18 WALLER LOWRY #1
 Field WILDCAT
 County ROOKS
 State KANSAS

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Location: API #: 15-163-24312-00-00
 1,670' FNL & 931' FWL
 SEC 31 TWP 8S RGE 19W
 Permanent Datum GROUND LEVEL Elevation 2040'
 Log Measured From KELLY BUSHING
 Drilling Measured From KELLY BUSHING
 Other Services
 DIL
 MEL
 Elevation
 K.B. 2048'
 D.F. N/A
 G.L. 2040'

Date	4/28/2016	
Run Number	ONE	
Type Log	CNL/CDL	
Depth Driller	3578'	
Depth Logger	3576'	
Bottom Logged Interval	3548'	
Top Logged Interval	250'	
Type Fluid In Hole	CHEMICAL	
Salinity, PPM CL	4800	
Density	9.4	
Level	FULL	
Max. Rec. Temp. F	112	
Operating Rig Time	2 1/2 HOURS	
Equipment -- Location	108 COLBY	
Recorded By	J. LONG	
Witnessed By	MARC DOWNING	

Run No.	Bit	Borehole Record		Casing Record	
		From	To	From	To
ONE	12.25"	00'	263'	8.625"	23#
TWO	7.875"	263'	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.
 DAMAR, 5 EAST, 1/4 SOUTH, EAST INTO

Log Measured From: KELLY BUSHING 8 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: J. LONG Operator: T. MARTIN Operator: Operator:	Primary Witness: MARC DOWNING Secondary Witness: Secondary Witness: Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\lampatriot_apo_18_wallerlowry_1.db
 Dataset field/well/stackmel/pass4.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	112	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	-620	54	Off	3576

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 CNSSC	37.48 36.73		CNT-M&W (tk10-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (71-914)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSI STKBL ML (PSI-02) Stackable Microlog Tools	7.58	4.00	65.00
RLL3 RLL3F	15.80 15.79					
CILD	8.00		DIL-M&W (1987)	18.50	3.50	220.00

CILM 4.70

SP 0.20

Dataset: ampatriot_apo_18_wallerlowry_1.db: field/well/stackmel/pass4.1
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in



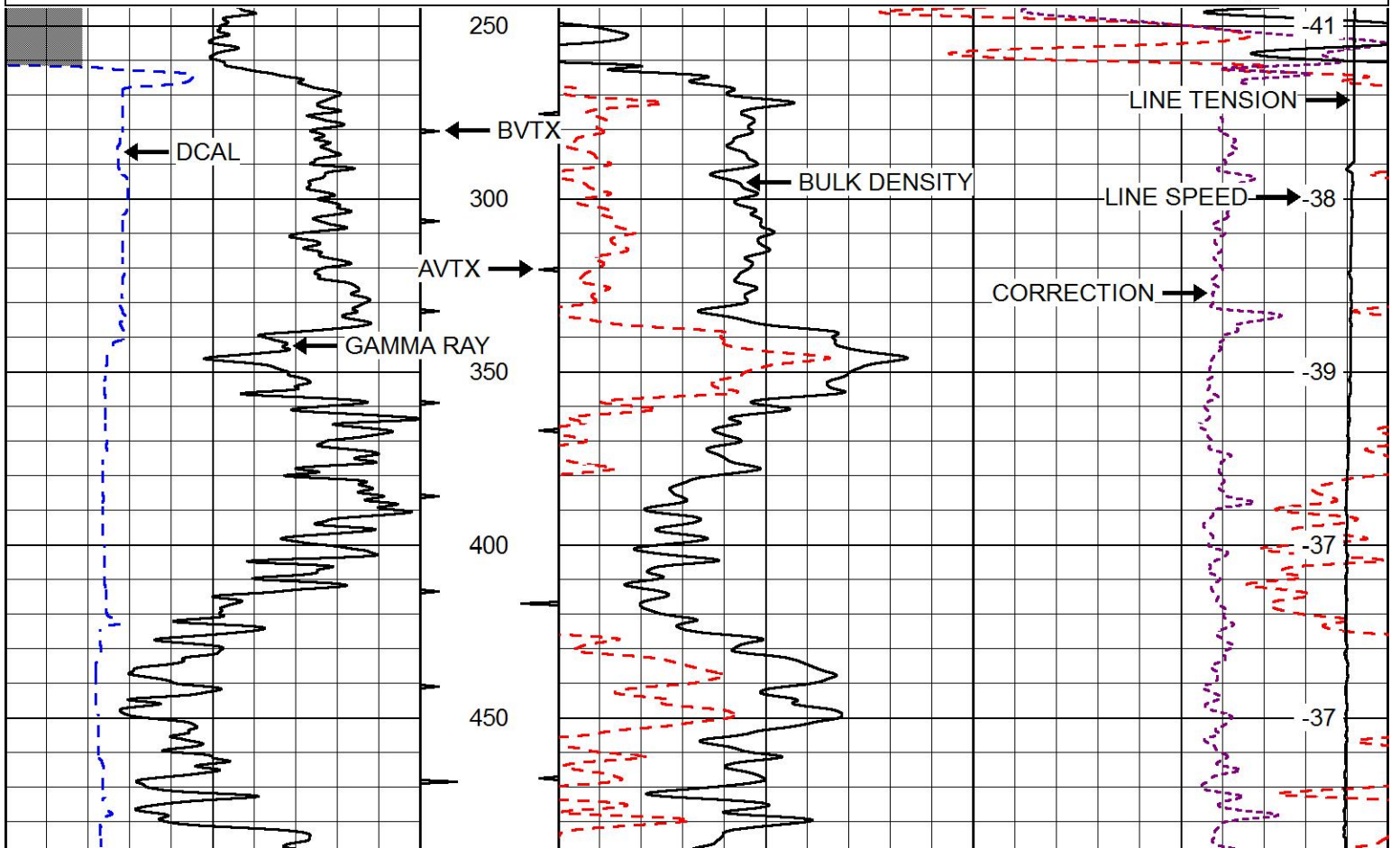
MAIN PASS

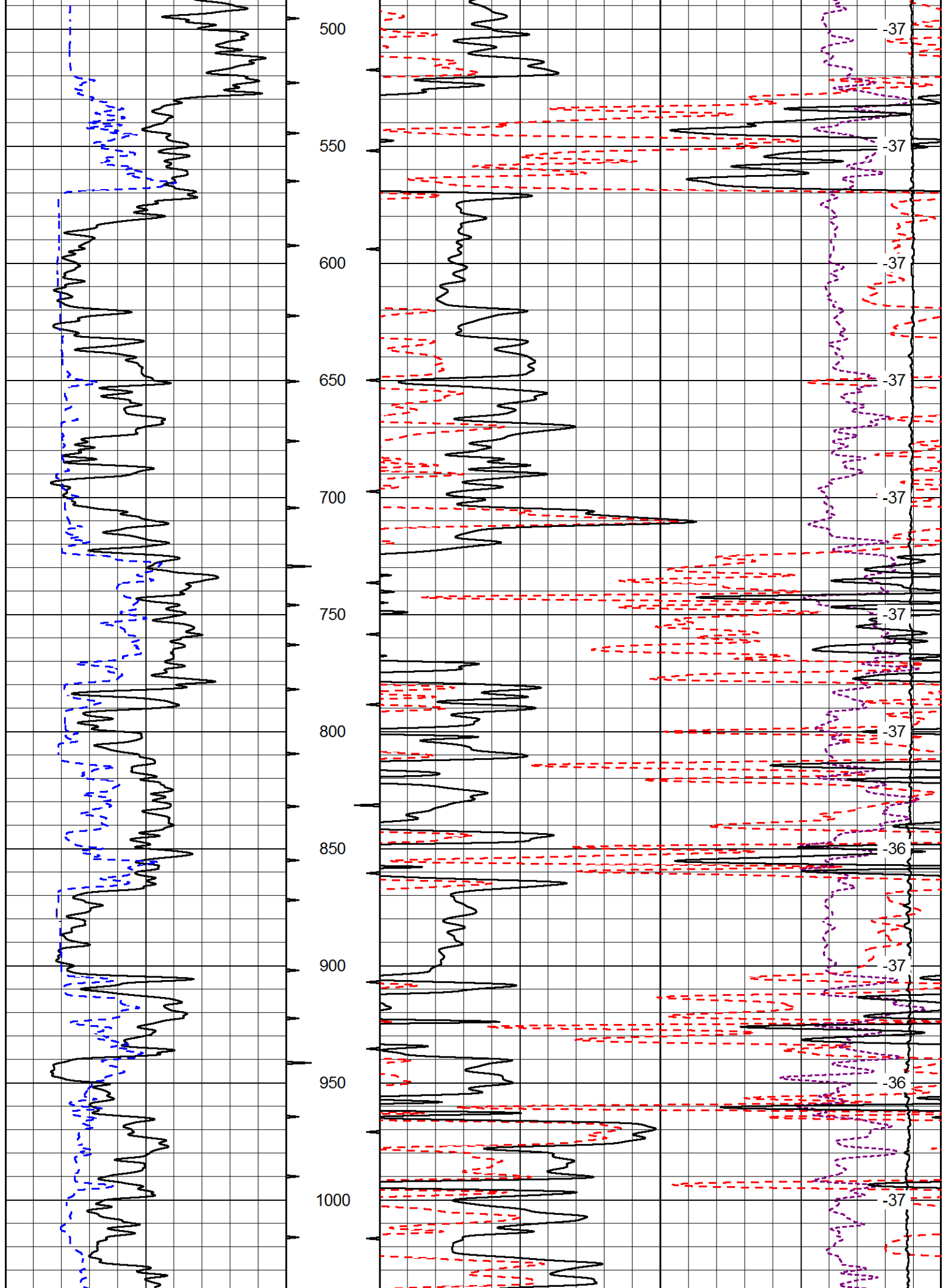
2" SCALE BULK DENSITY

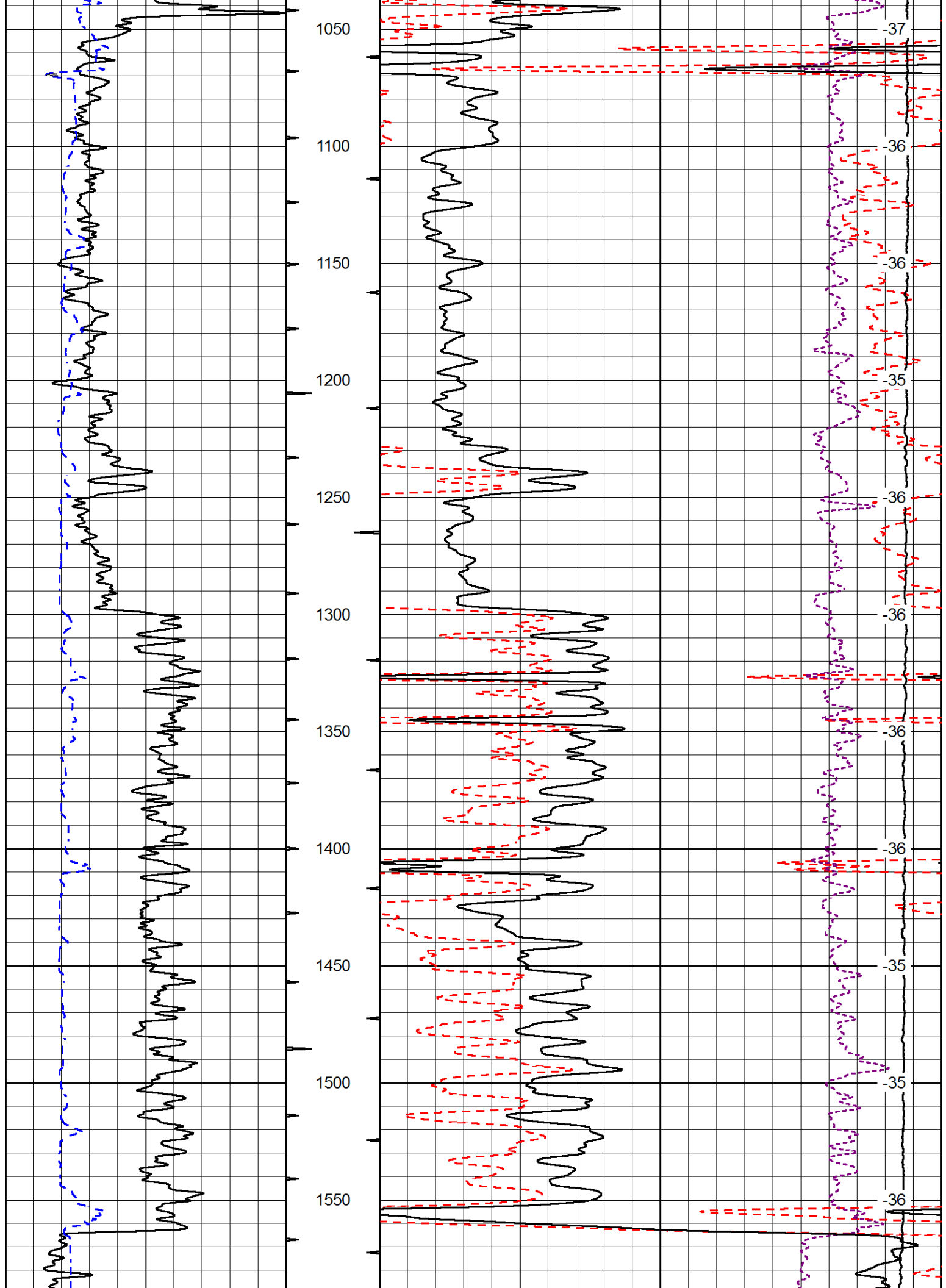
Database File ampatriot_apo_18_wallerlowry_1.db
 Dataset Pathname stackmel/pass4.3
 Presentation Format cdl
 Dataset Creation Thu Apr 28 17:01:54 2016
 Charted by Depth in Feet scaled 1:600

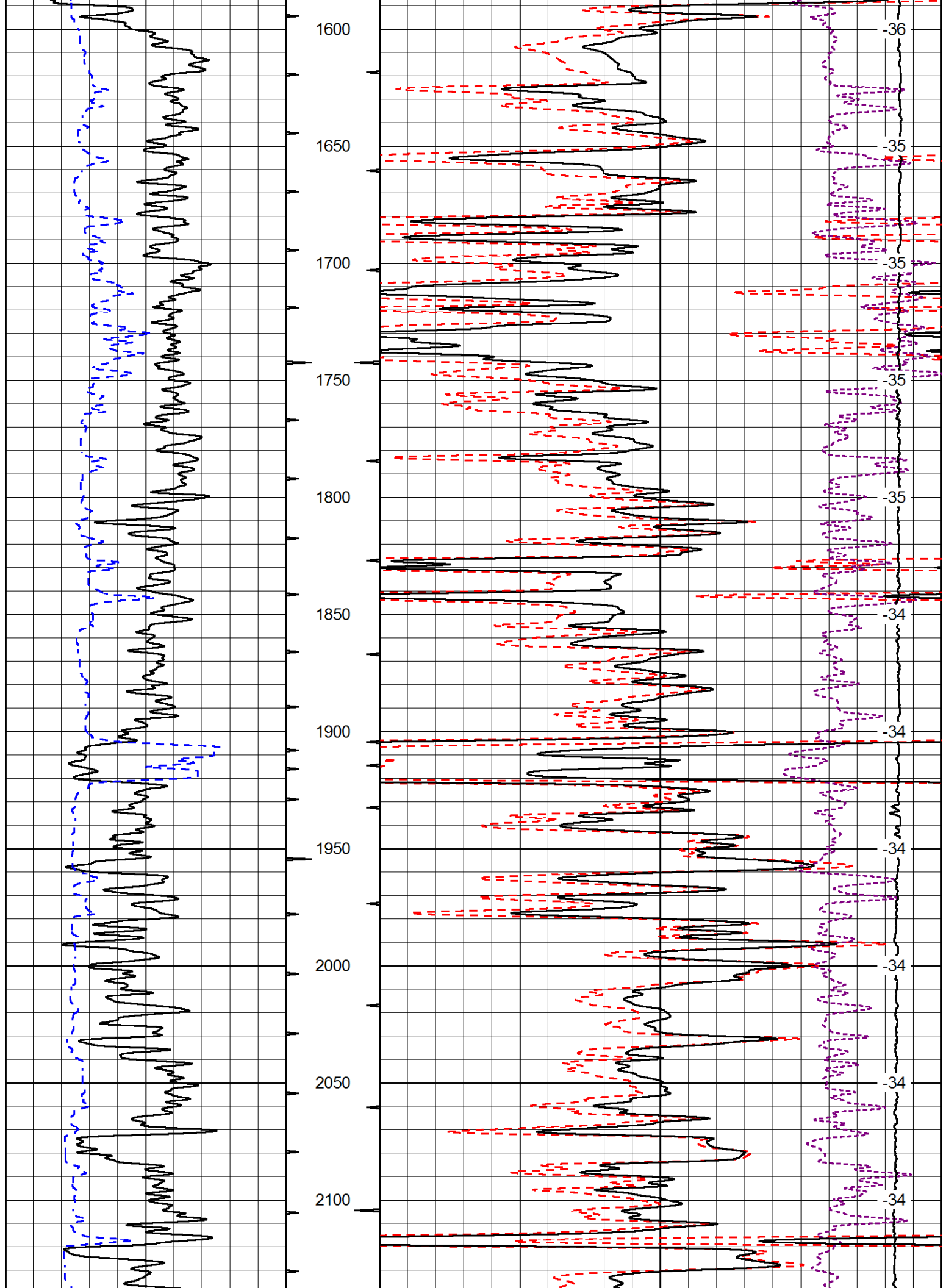
0	GAMMA RAY (GAPI)	150
6	CALIPER (in)	16

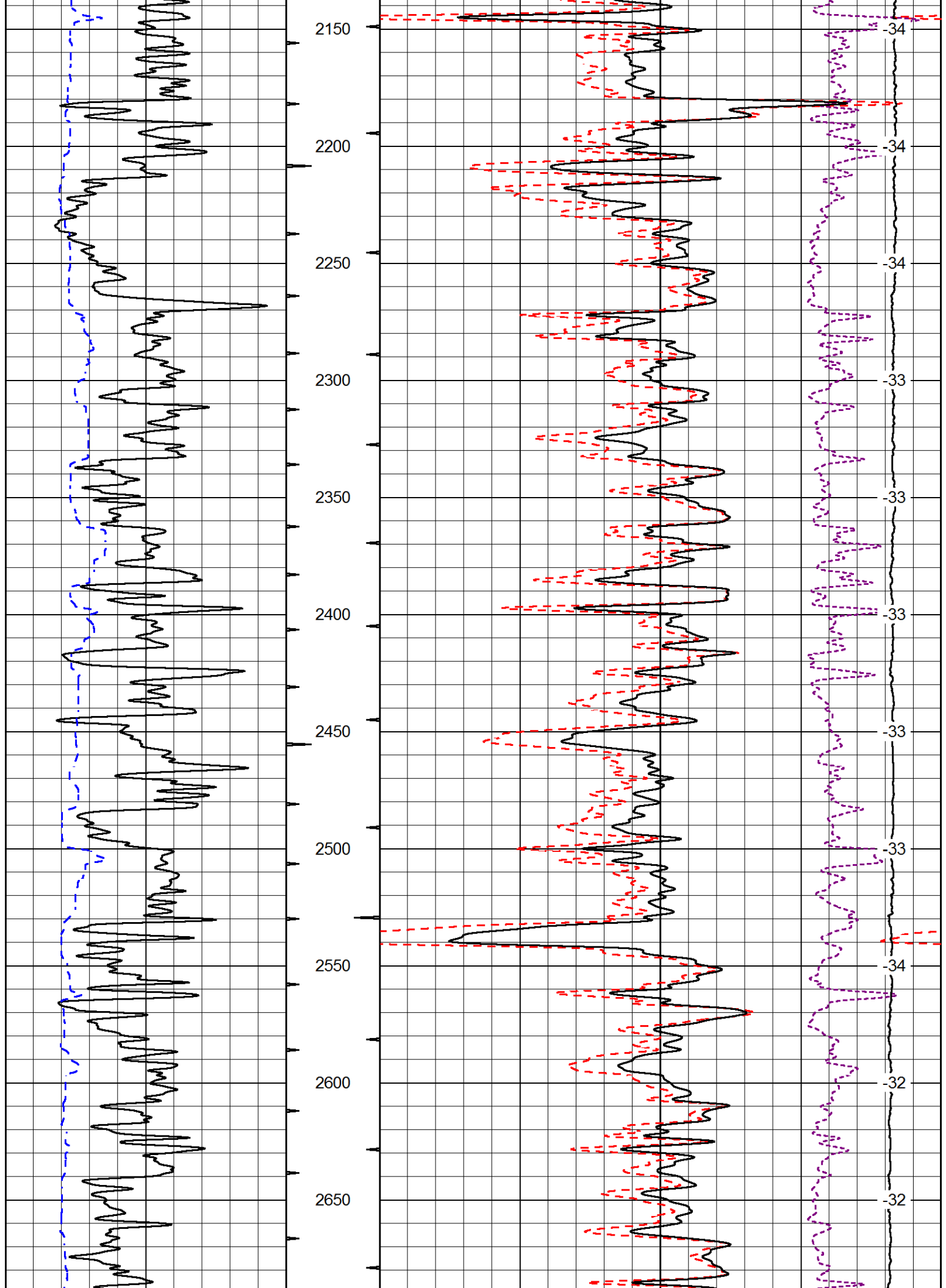
30	COMPENSATED DENSITY (pu)	-10
2	BULK DENSITY (g/cc)	3
15000	LINE TENSION (lb)	0
-0.25	CORRECTION (g/cc)	0.25
	LINE SPEED (ft/min)	

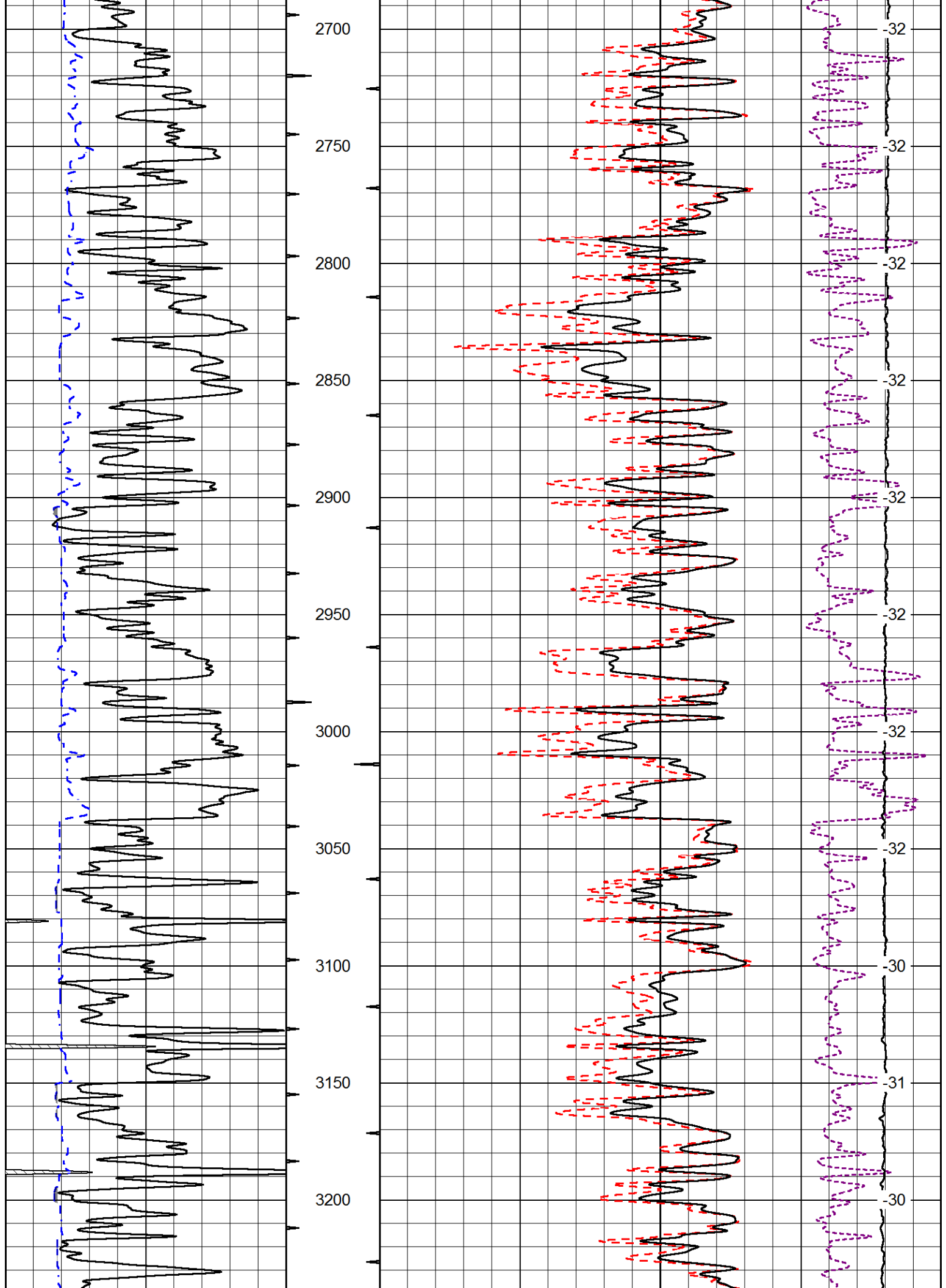


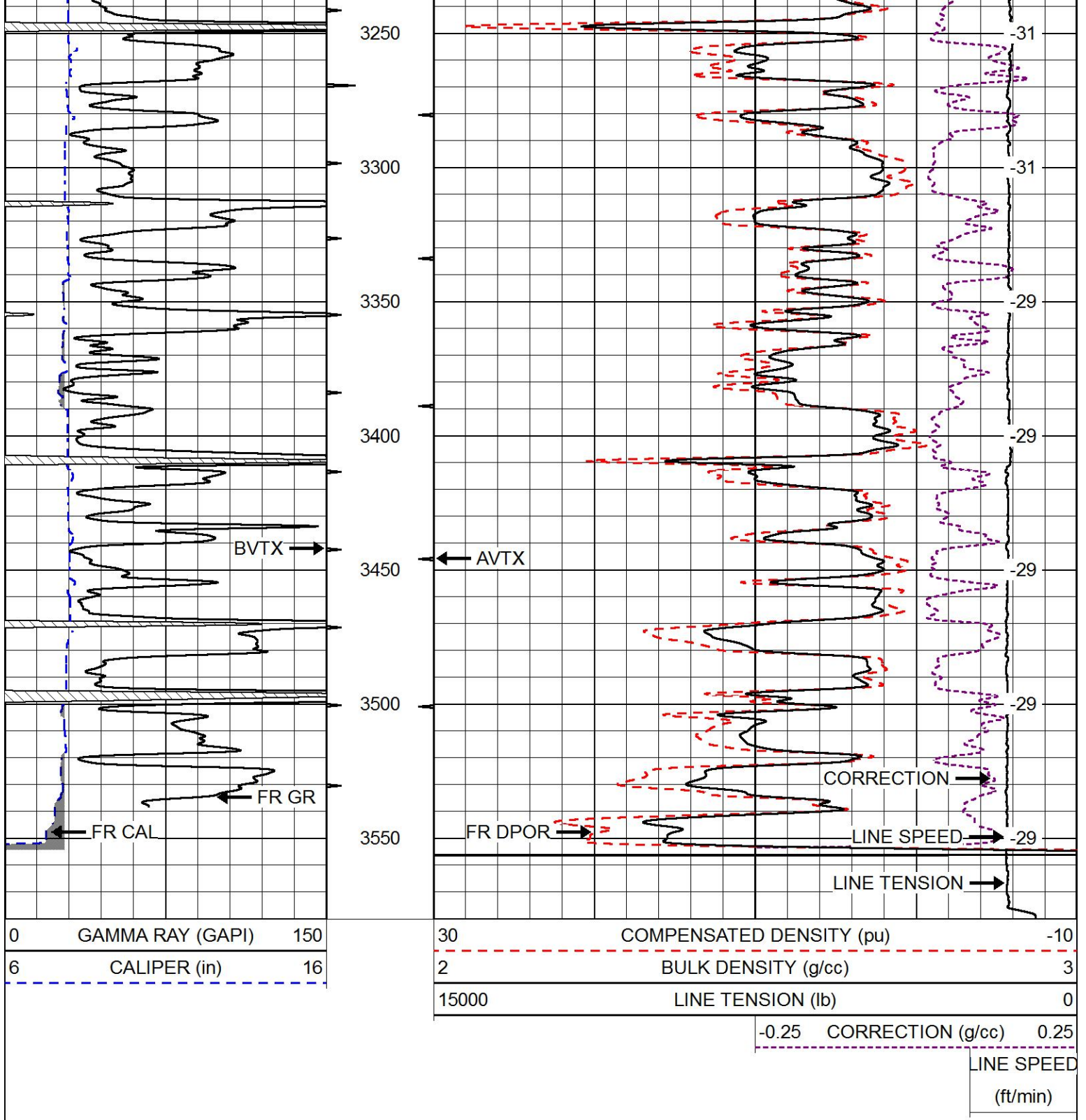












MAIN PASS

Database File: ampatriot_apo_18_wallerlowry_1.db
 Dataset Pathname: stackmel/pass4.1
 Presentation Format: cndlspec
 Dataset Creation: Thu Apr 28 17:00:34 2016
 Charted by: Depth in Feet scaled 1:240

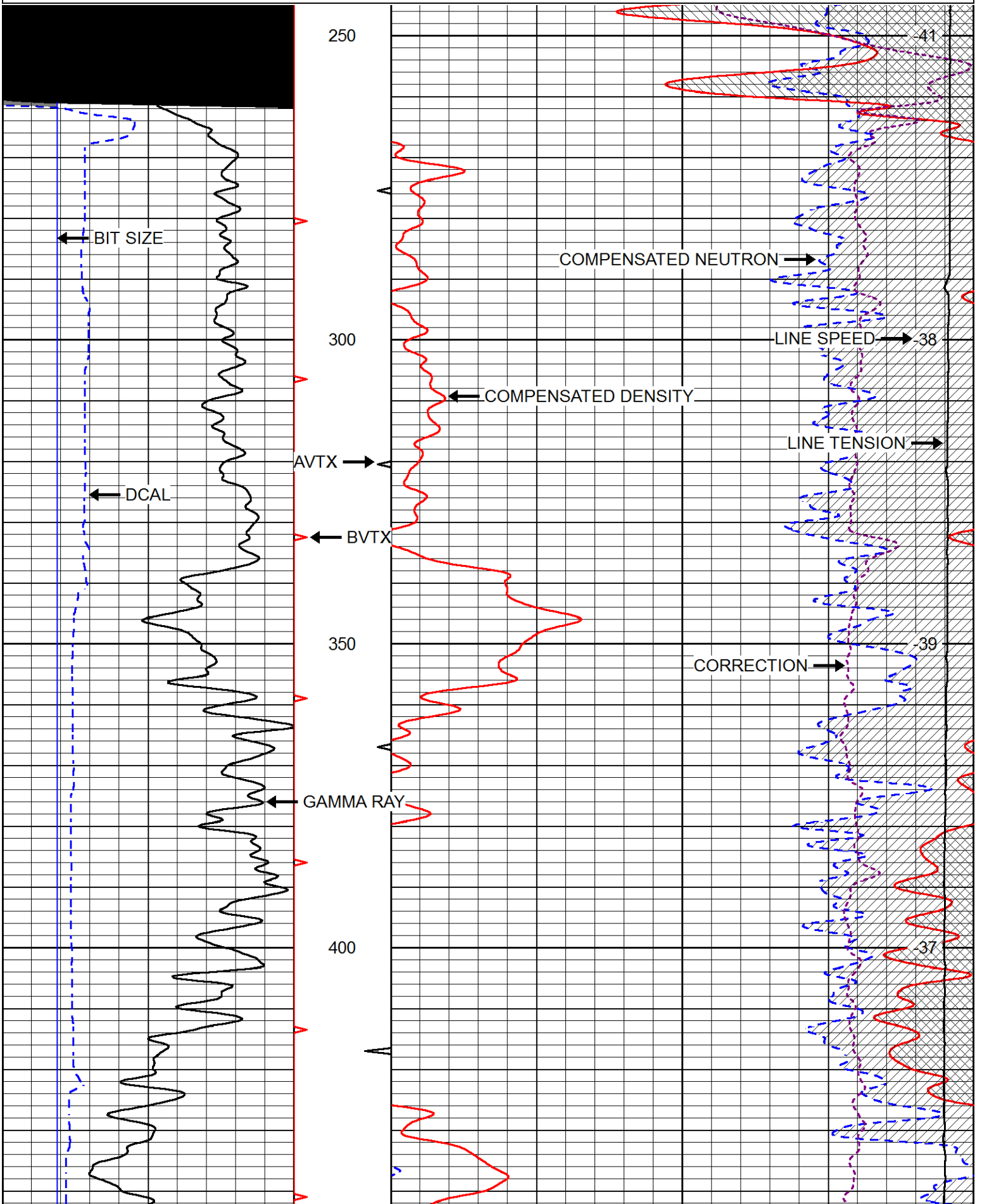


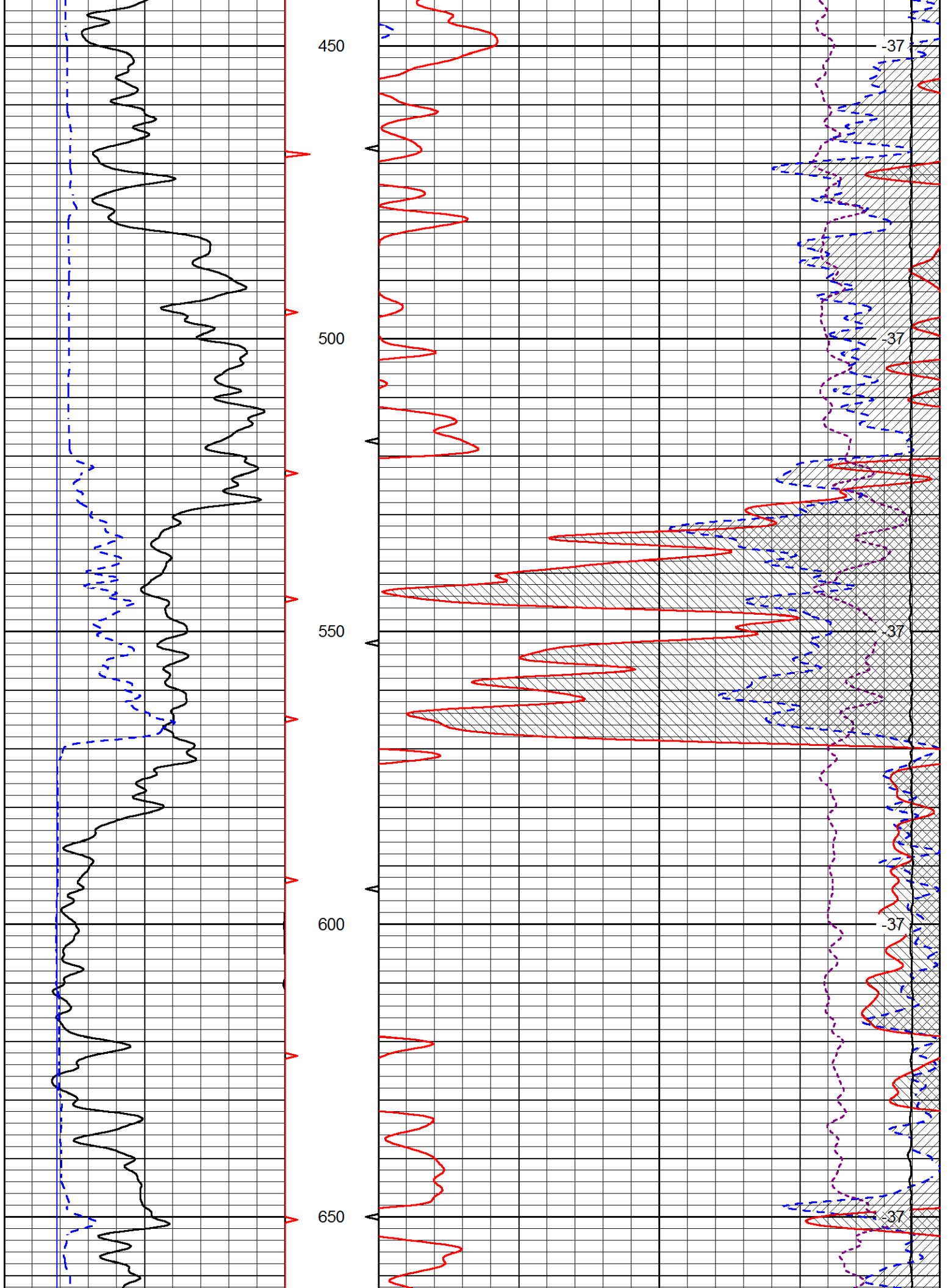
6 BIT SIZE (in) 16

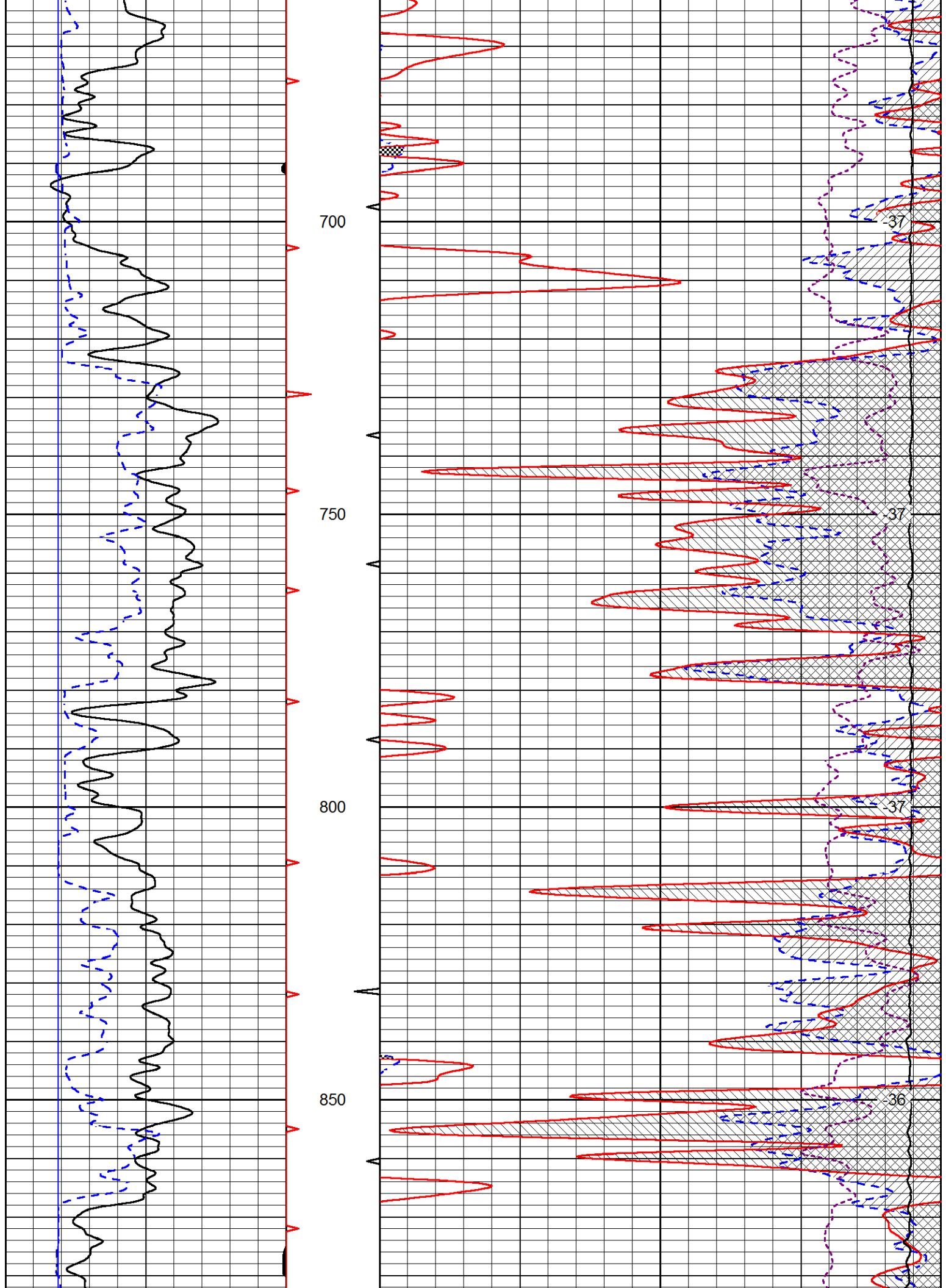
15000 LINE TENSION (lb) 0

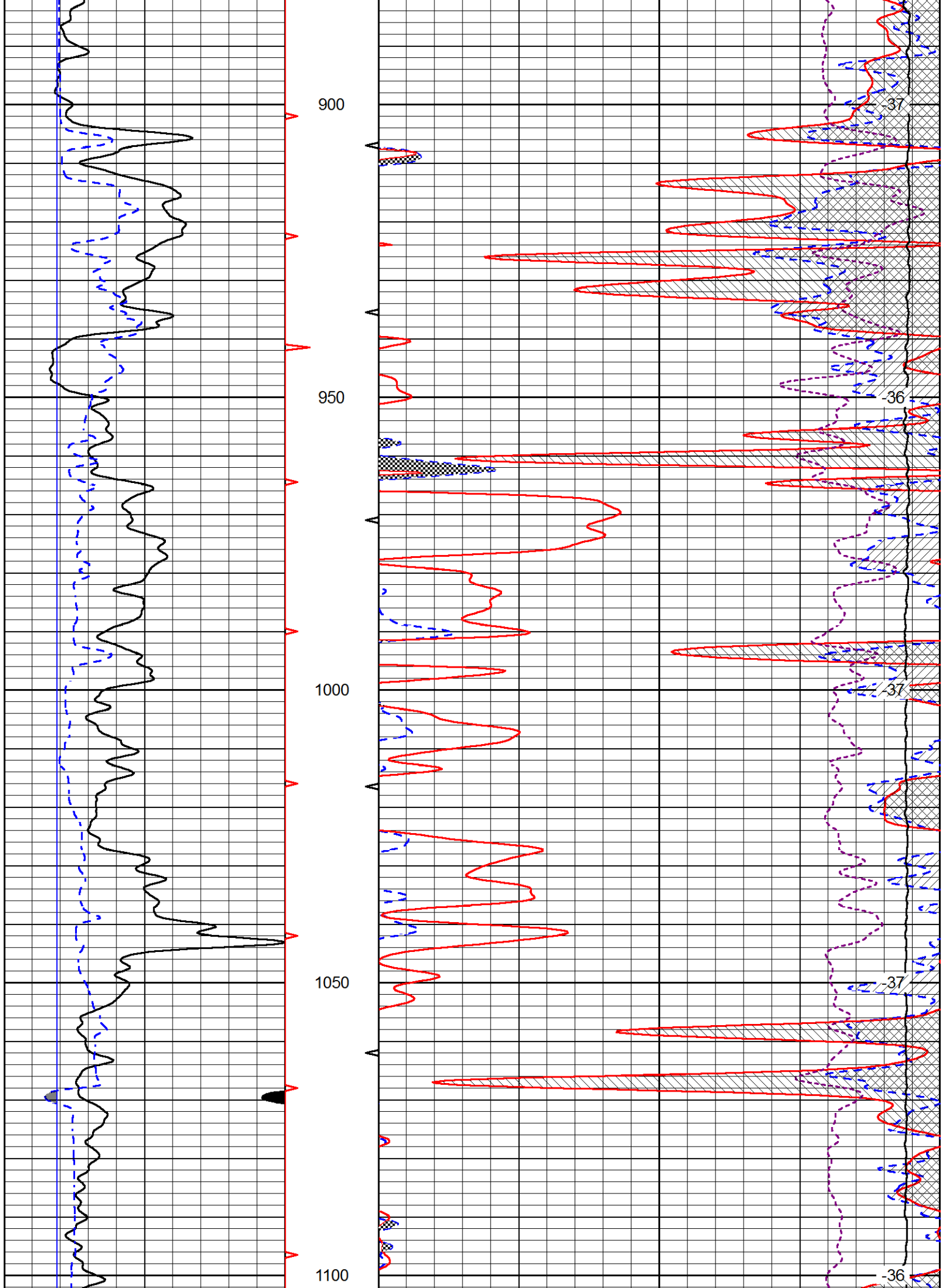
-0.25 CORRECTION (g/cc) 0.25

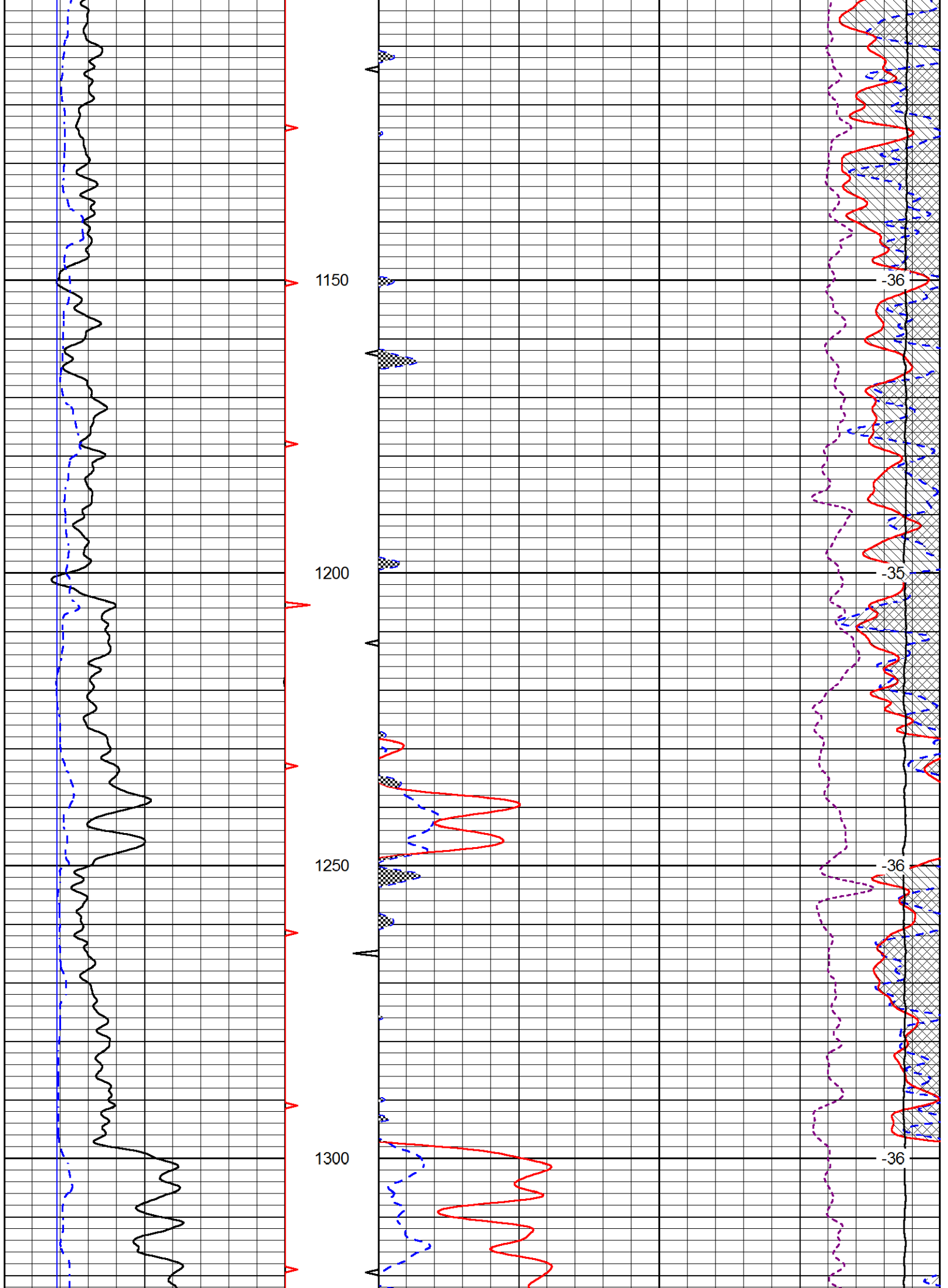
LINE SPEED
(ft/min)

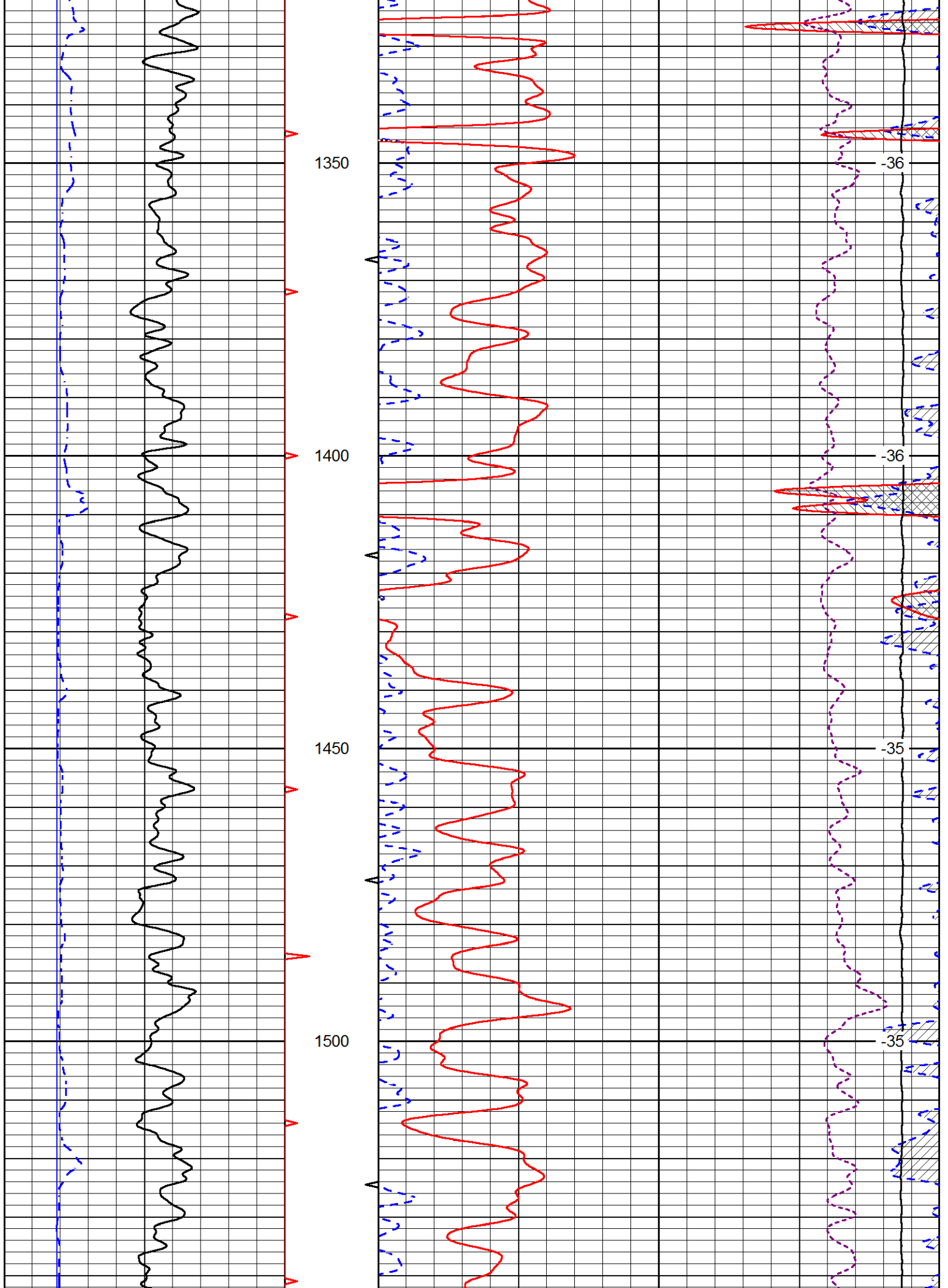


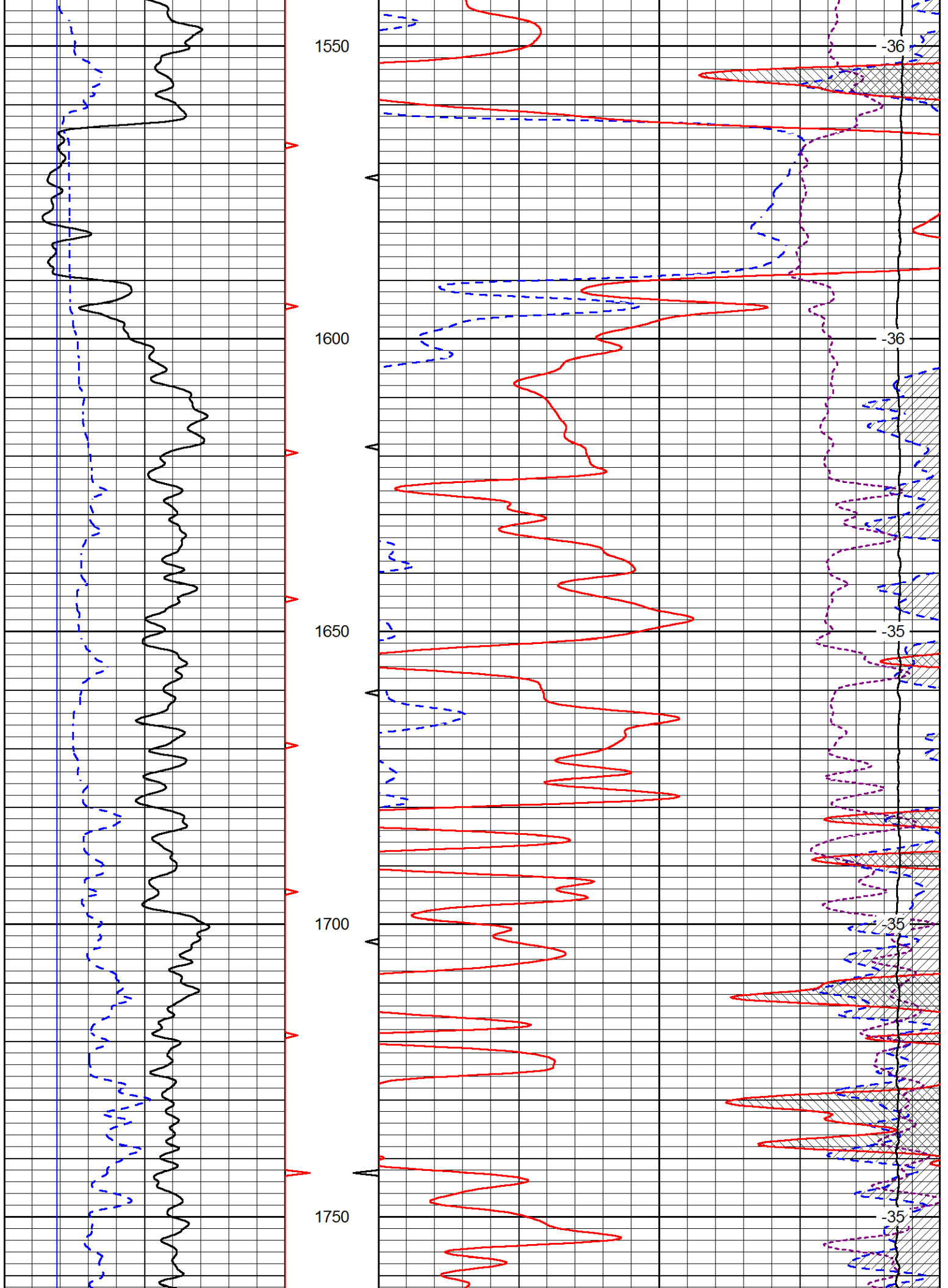


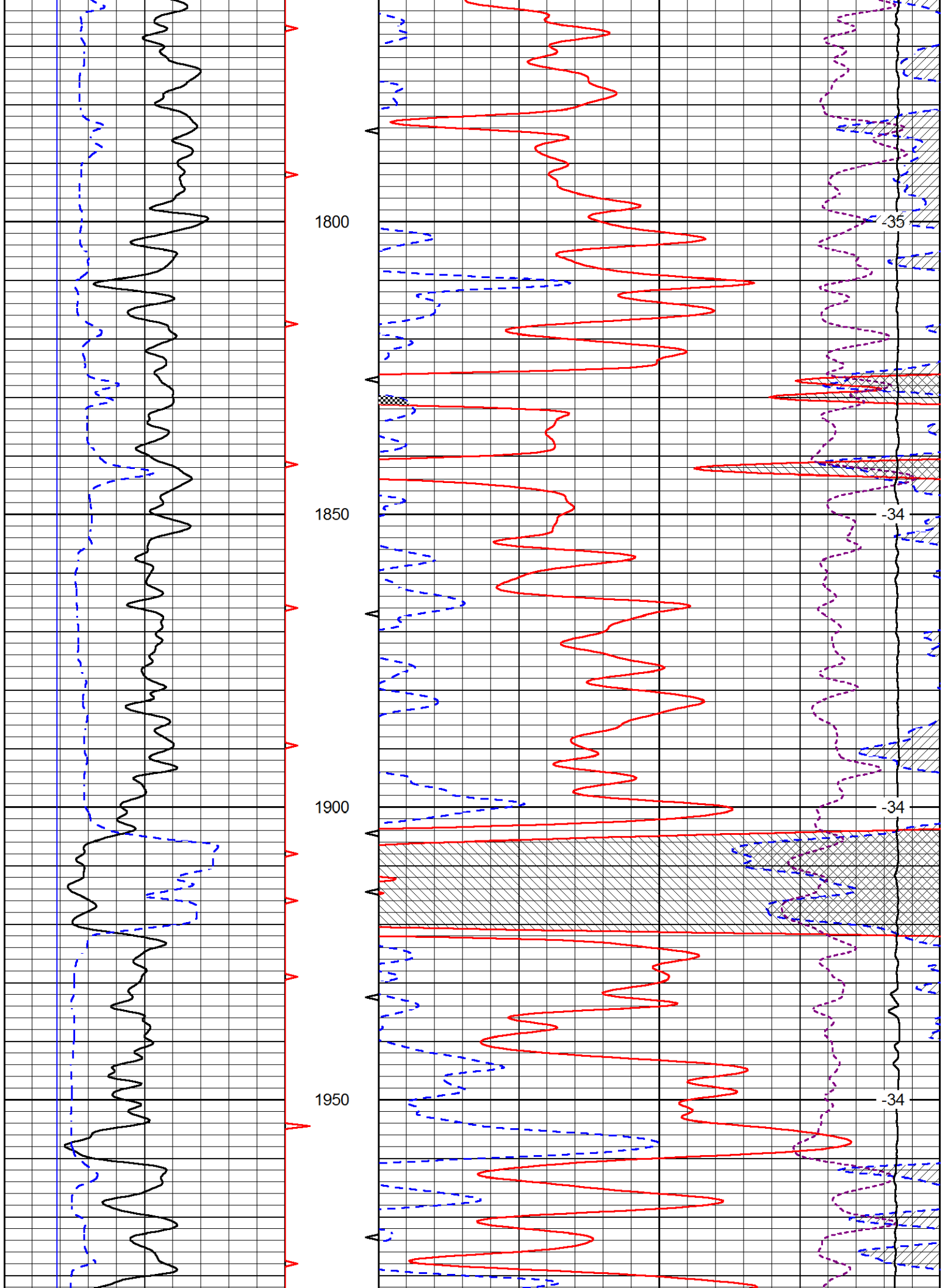


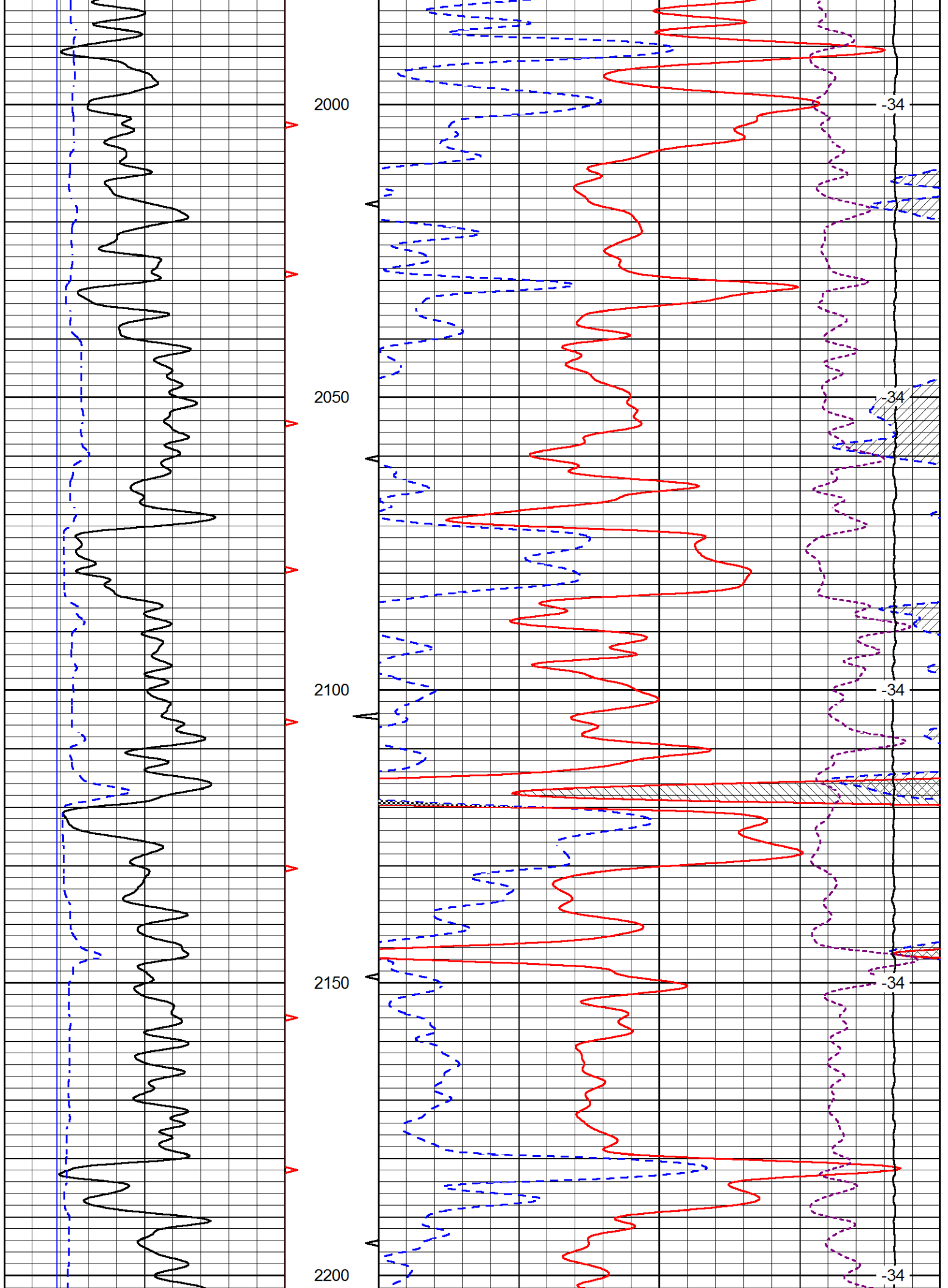


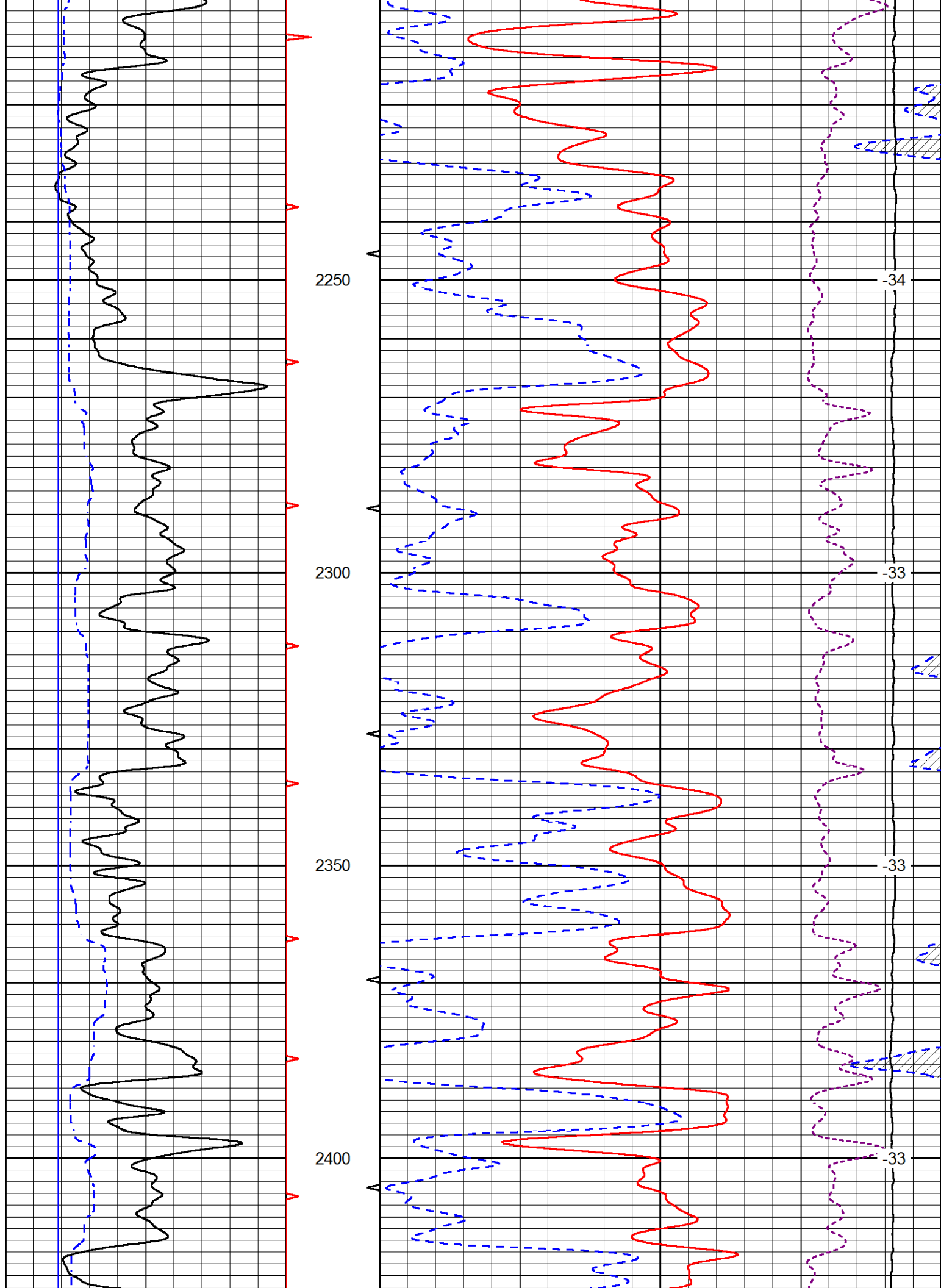


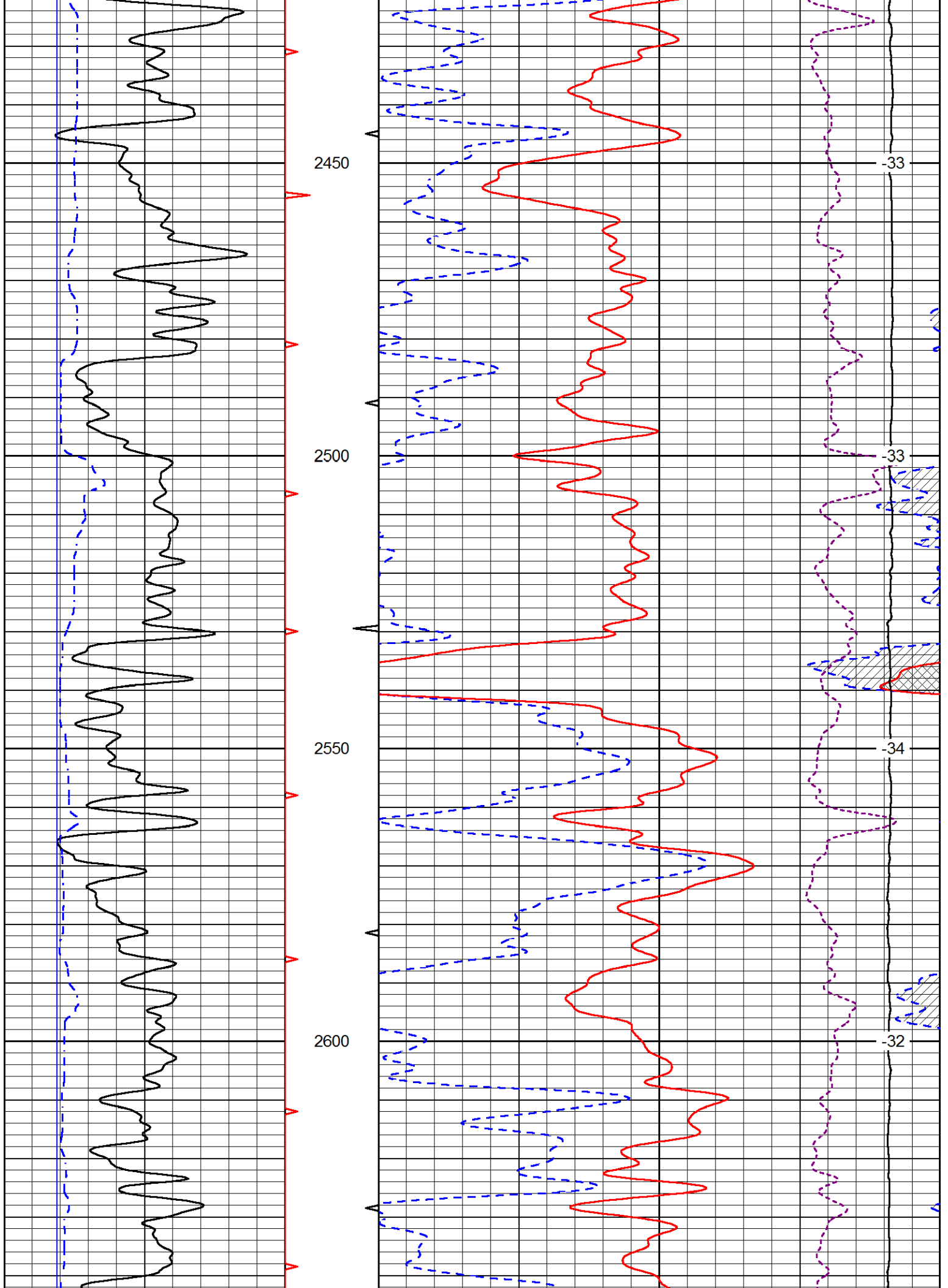


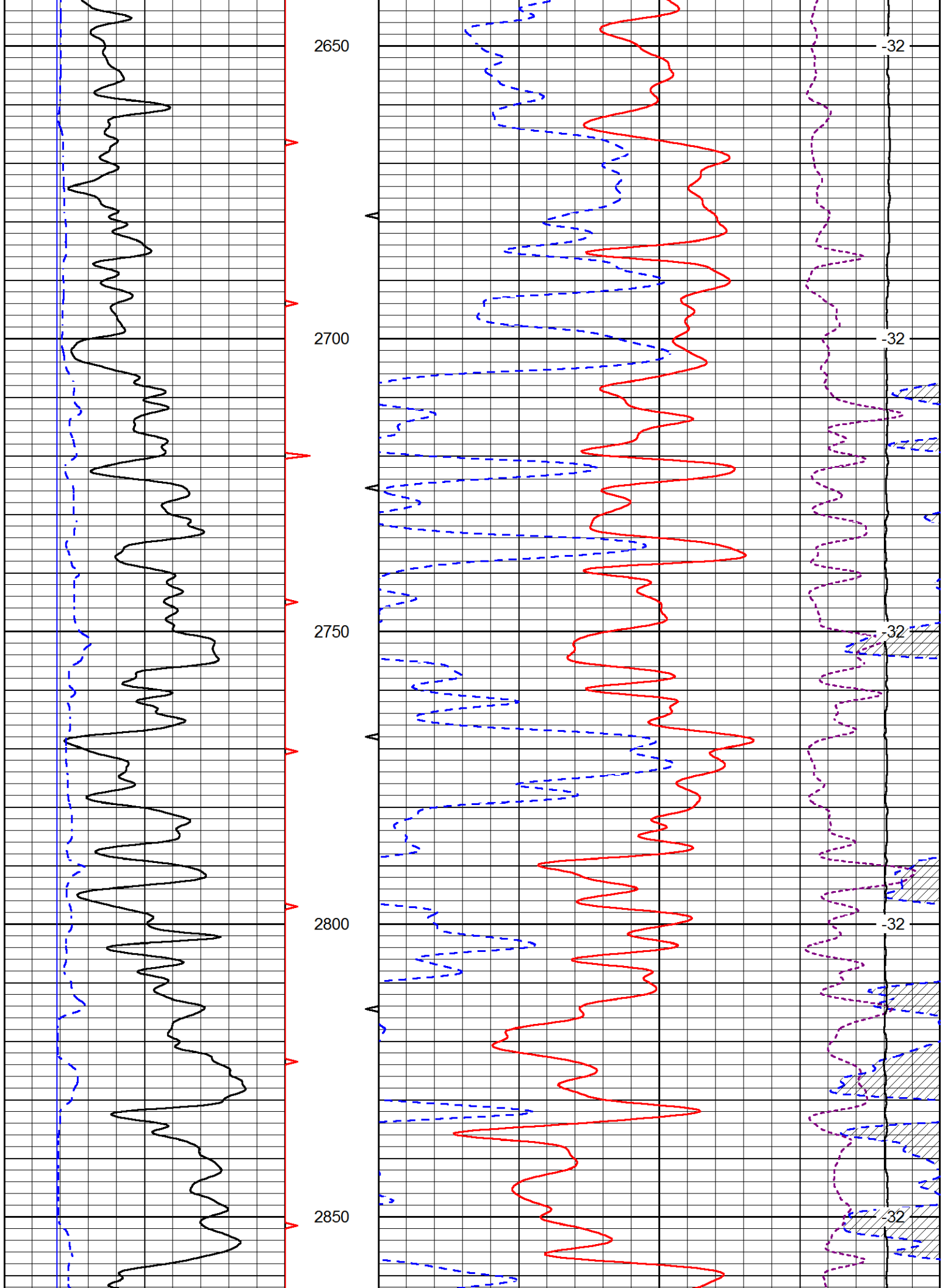


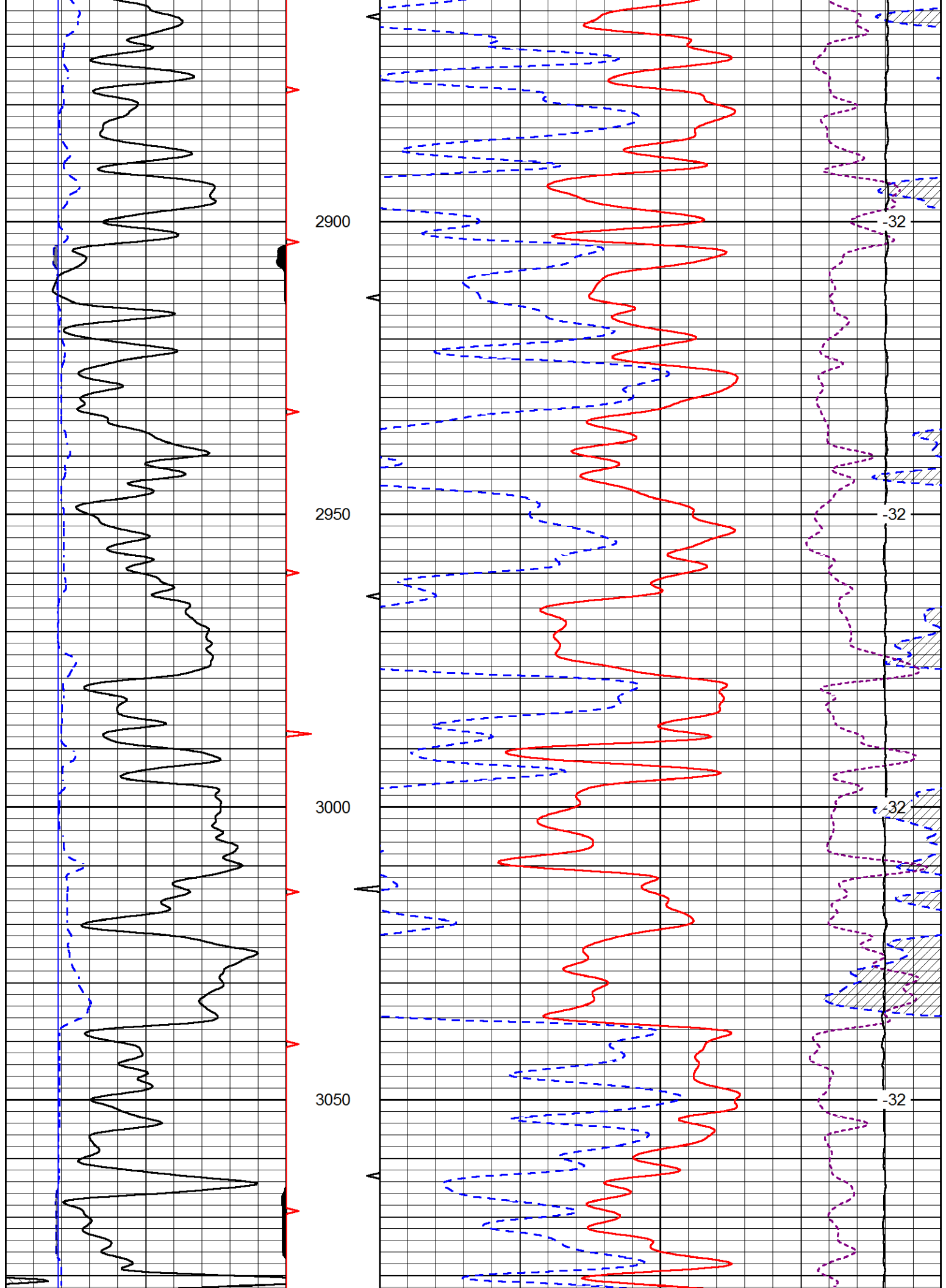


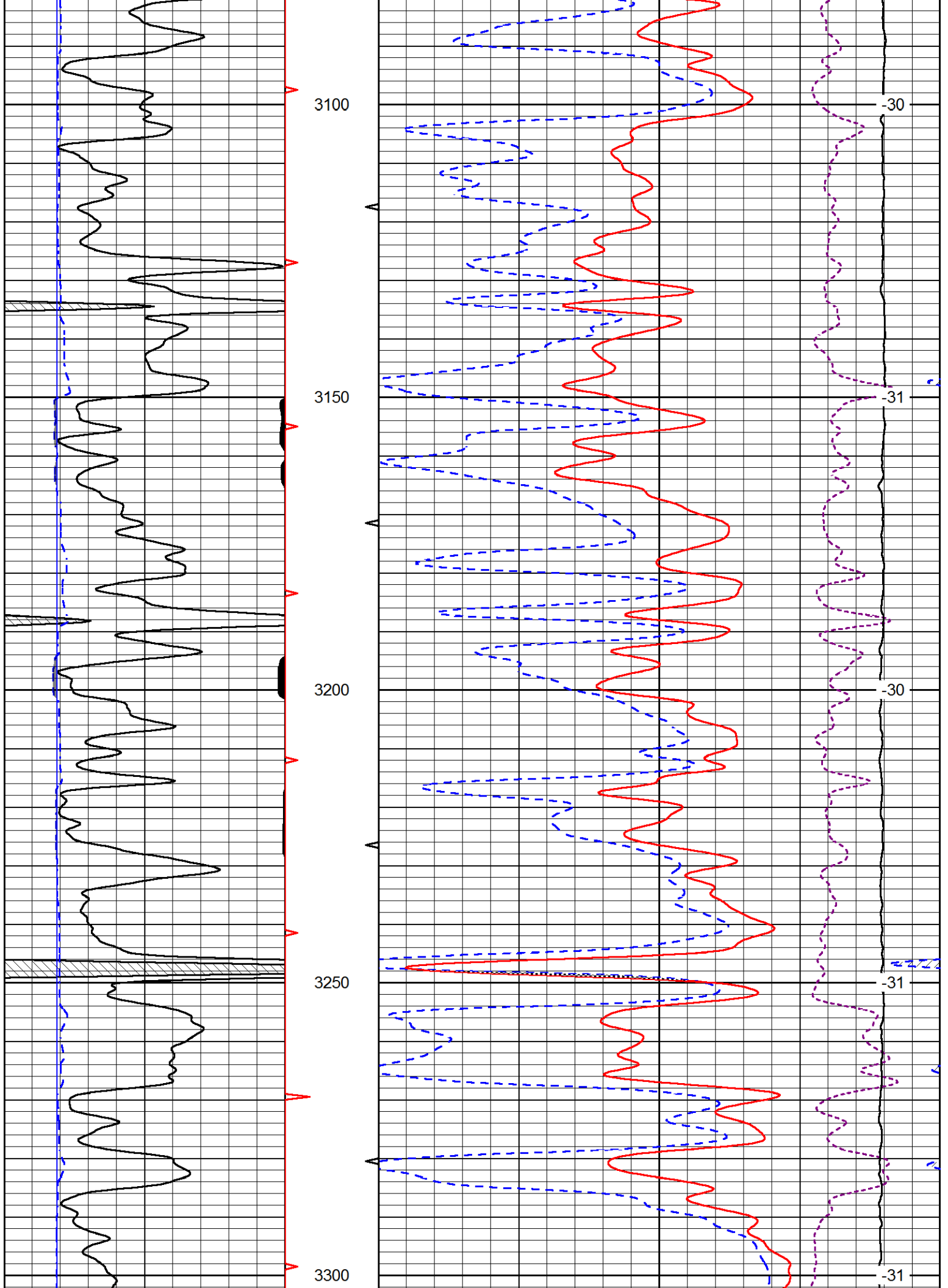


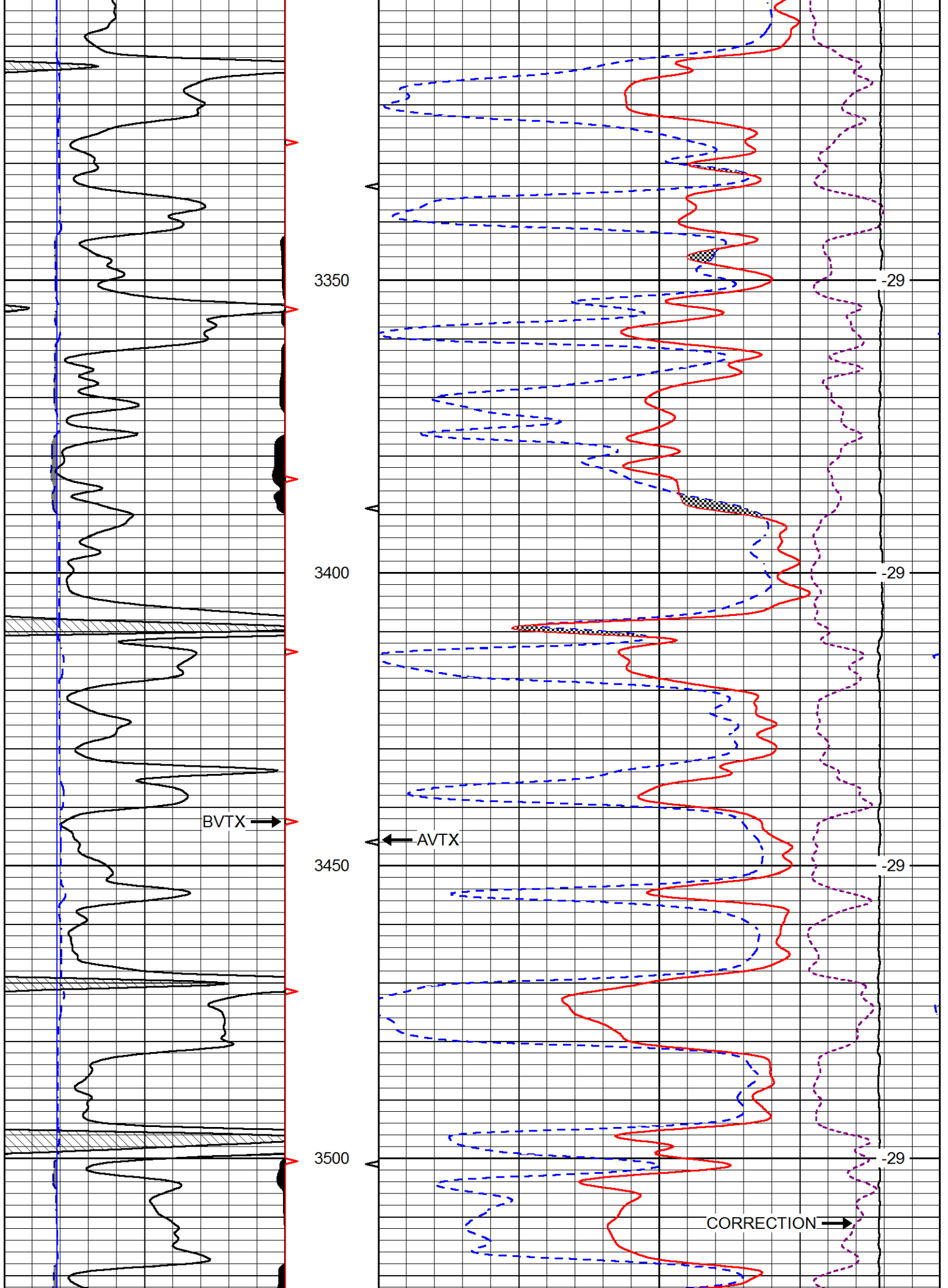


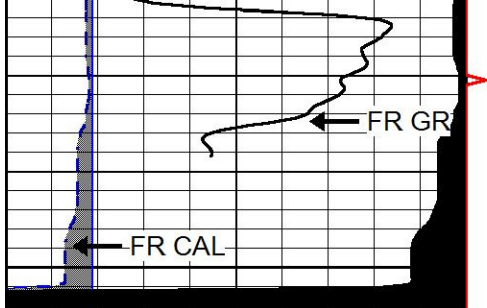




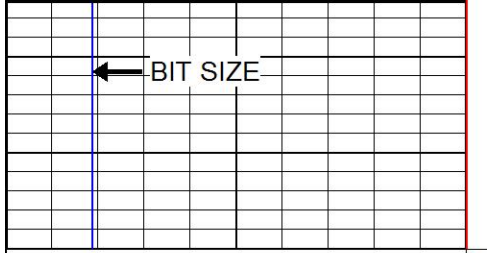




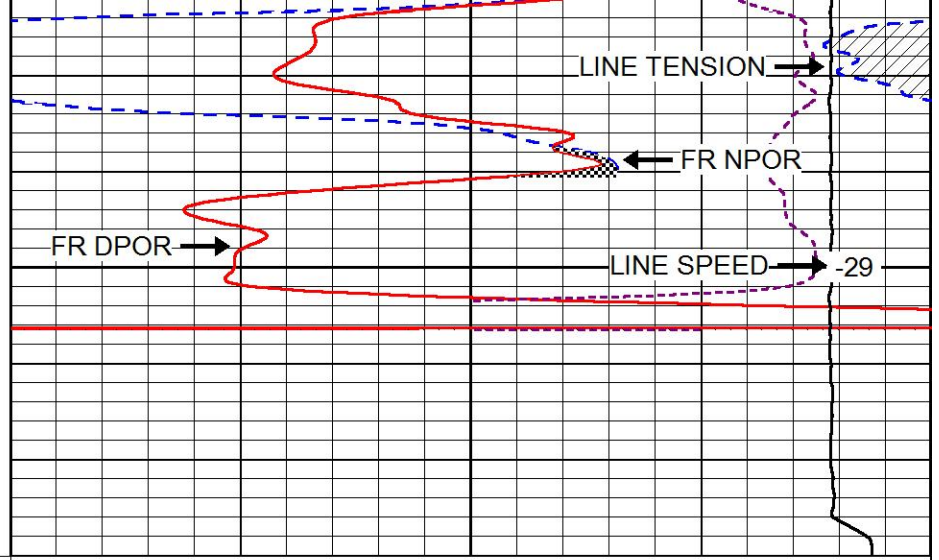




3550



0	GAMMA RAY (GAPI)	150
6	CALIPER (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
	LINE SPEED (ft/min)	



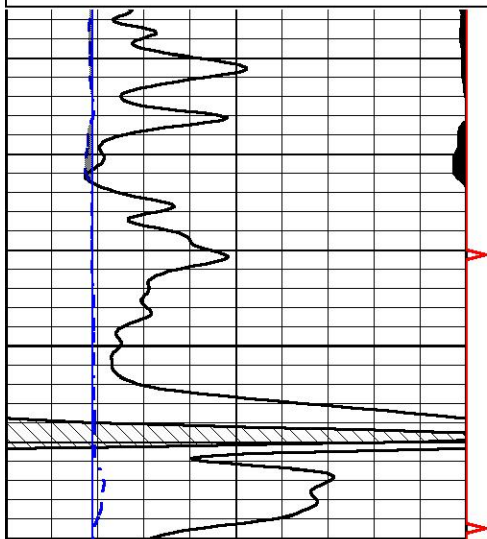
REPEAT SECTION

Database File: ampatriot_apo_18_wallerlowry_1.db
 Dataset Pathname: stackmel/pass3.1
 Presentation Format: cndlspec
 Dataset Creation: Thu Apr 28 15:55:11 2016
 Charted by: Depth in Feet scaled 1:240

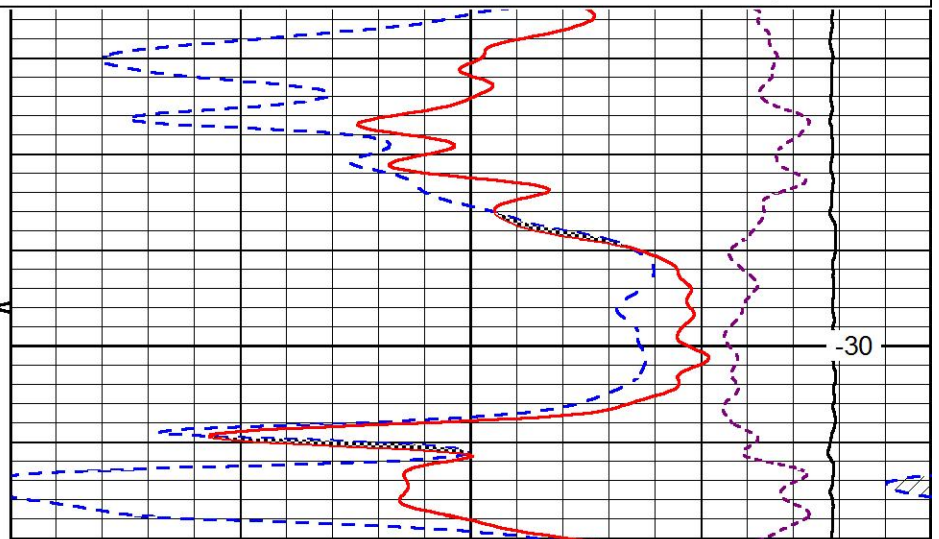
0	GAMMA RAY (GAPI)	150
6	CALIPER (in)	16
6	BIT SIZE (in)	16

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

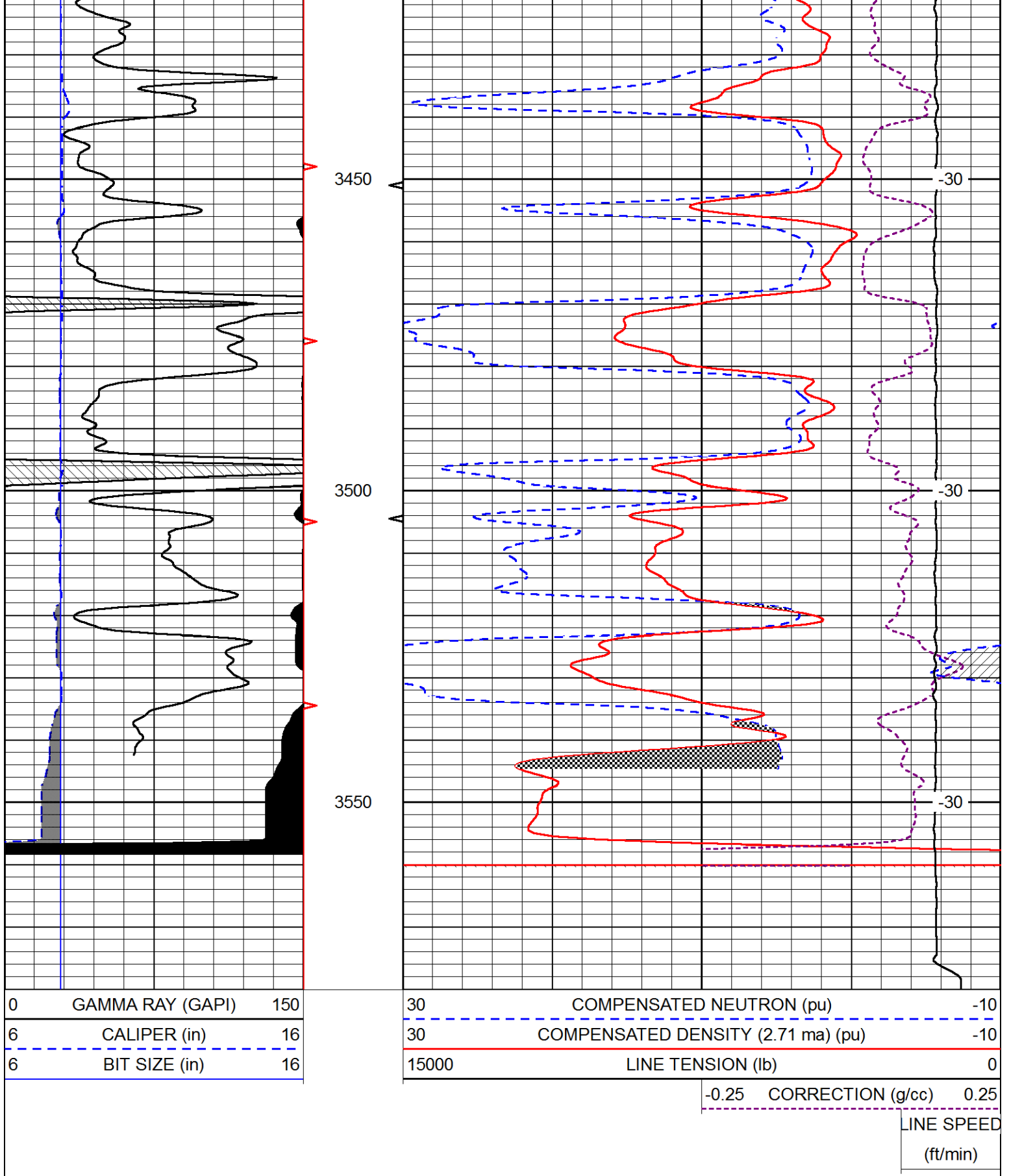
-0.25	CORRECTION (g/cc)	0.25
	LINE SPEED (ft/min)	



3400



-30



Calibration Report

Database File ampatriot_apo_18_wallerlowry_1.db
 Dataset Pathname stackmel/pass4.1
 Dataset Creation Thu Apr 28 17:00:34 2016

Dual Induction Calibration Report

Serial-Model:
Calibration Performed:

1987-M&W
Thu Mar 31 15:53:34 2016

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.530	-38.000
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-110.500

Microlog Calibration Report

Serial-Model:
Performed:

PSI-02-PSI STKBL ML
Thu Apr 14 22:34:04 2016

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	10308.9000	-0.2000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	7967.2700	0.4000
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-131.1700

Compensated Density Calibration Report

Serial-Model:
Source / Verifier:
Master Calibration Performed:

71-914-M&W
/
Thu Mar 31 16:30:19 2016

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4314.49	5307.52	cps
Aluminum	2.670	g/cc	822.19	3456.36	cps
Spine Angle = 75.49			Density/Spine Ratio = 0.534		
	Size		Reading		
Small Ring	4.00	in	1.16		
Large Ring	14.00	in	1.57		

Compensated Neutron Calibration Report

Serial Number: tk10-MW
Tool Model: M&W
Calibration Performed: Wed Mar 30 10:04:05 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 Mar 31 15:29:33 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

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