

DUAL COMPENSATED POROSITY W/PE

MIDWEST WIRELINE

Company		LB Exploration, Inc.					
Well	Prochaska/Rathbun Unit #1						
Field	Ellsworth						
County	Ellsworth						
State	Kansas						
Location:		API # : 15-053-21389-00-00	Other Services				
SEC 9 TWP 16S RGE 8W		DIL MEL/BHCS					
Permanent Datum	Ground Level	Elevation	1613				
Log Measured From	Kelly Bushing	K.B.	1623				
Drilling Measured From	Kelly Bushing	D.F. G.L.	1613				
Date	8/24/2023						
Run Number	One						
Type Log	CNL/CDL						
Depth Driller	3060						
Depth Logger	3059						
Bottom Logged Interval	3030						
Top Logged Interval	1000						
Type Fluid In Hole	Chemical						
Salinity, PPM CL	5000						
Density	9.4						
Level	Full						
Max. Rec. Temp. F	107						
Operating Rig Time	4 Hours						
Equipment -- Location	P-24 Hays						
Recorded By	T. Martin						
Witnessed By	Jim Musgrove						
Borehole Record		Casing Record					
Run No.	Bit	From	To	Size	Wgt.	From	To
One	12.25	00	223	8.625	23	00	223
Two	7.875	223	TD				

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All interpretations are opinions based on inferences from electrical or other measurements and Midwest Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Midwest 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.

Ellsworth, KS, S of town at 156/14 Junction,
3.5 S on 14 to Ave O, W & N into

Log Measured From: Kelly Bushing 10 Ft. Above Permanent Datum

THANK YOU FOR USING MIDWEST WIRELINE LLC
785-625-3858

Your Midwest Wireline Crew

Engineer: T. Martin
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: Jim Musgrove
Secondary Witness:
Secondary Witness:
Secondary Witness:

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.75		GR-M&W (106)	3.00	3.50	50.00
CNLSC	37.65		CNT-M&W (207)	5.00	3.50	100.00
CNSSC	36.90					
			MWLith-STEP LITHO (704-10) Long Litho Mandrel	8.92	5.00	250.00
LCAL	28.21		ML-PSIML (401)	7.58	4.00	65.00
LLW8N	28.21					
LLW7N	28.21					
LLW6N	28.21					
LLW5N	28.21					
LLW4N	28.21					
LLW3N	28.21					
LLW2N	28.21					
LLW1N	28.21					
LSLOCK	27.96					
LLLOCK	27.96					
PELTMPR	27.96					
LSHVNG	27.96					
LLHVNG	27.96					
LSW8N	27.71					
LSW7N	27.71					
LSW6N	27.71					
LSW5N	27.71					
LSW4N	27.71					
LSW3N	27.71					
LSW2N	27.71					
LSW1N	27.71					
MCAL	19.58		DIL-M&W (507)	18.25	3.50	220.00
MI	19.58					
MN	19.58					
RLL3F	15.50					
RLL3	15.50					
CILD	8.33					
CILM	4.50					
SP	0.20					
Dataset: lb_prochaska-rathbun unit #1.db: field/well/StkMI/pass3.1 Total length: 42.75 ft Total weight: 685.00 lb O.D.: 5.00 in						

Log Variables

DatabaseC:\ProgramData\Warrior\Data\lb_prochaska-rathbun unit #1.db
Dataset field/well/StkMI/pass3.1/_vars_

Top - Bottom

BOREID in 7.875	BOTTEMP degF 107	CASEOD in 5.5	CASETHCK in 0	FLUIDDEN g/cc 1	MATRXDEN g/cc 2.71	NPORSEL Limestone	PERFS No
SNDERR mmho/m 0	SNDERRM mmho/m 0	SPSHIFT mV -30	SRFTEMP degF 80	SZCOR Off	TDEPTH ft 3059		

Variable Description

BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
FLUIDDEN : Fluid Density
MATRXDEN : Matrix Density
NPORSEL : Neutron Porosity Curve Select

PERFS : Perforation Flag
SNDERR : Deep Sonde Error Correction
SNDERRM : Medium Sonde Error Correction
SPSHIFT : S.P. Baseline Offset
SRFTEMP : Surface Temperature
SZCOR : CN Size Cor. ?
TDEPTH : Total Depth



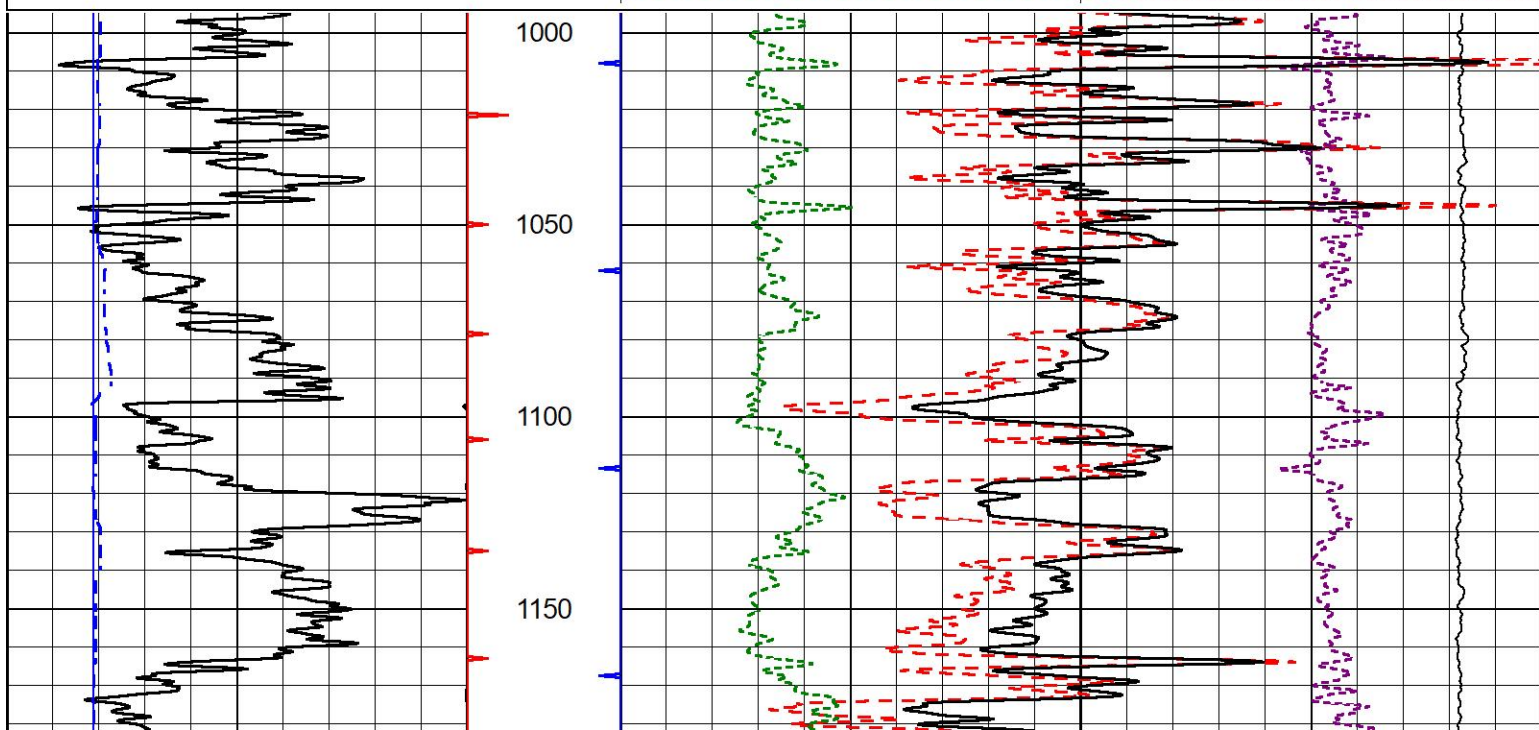
MIDWEST WIRELINE

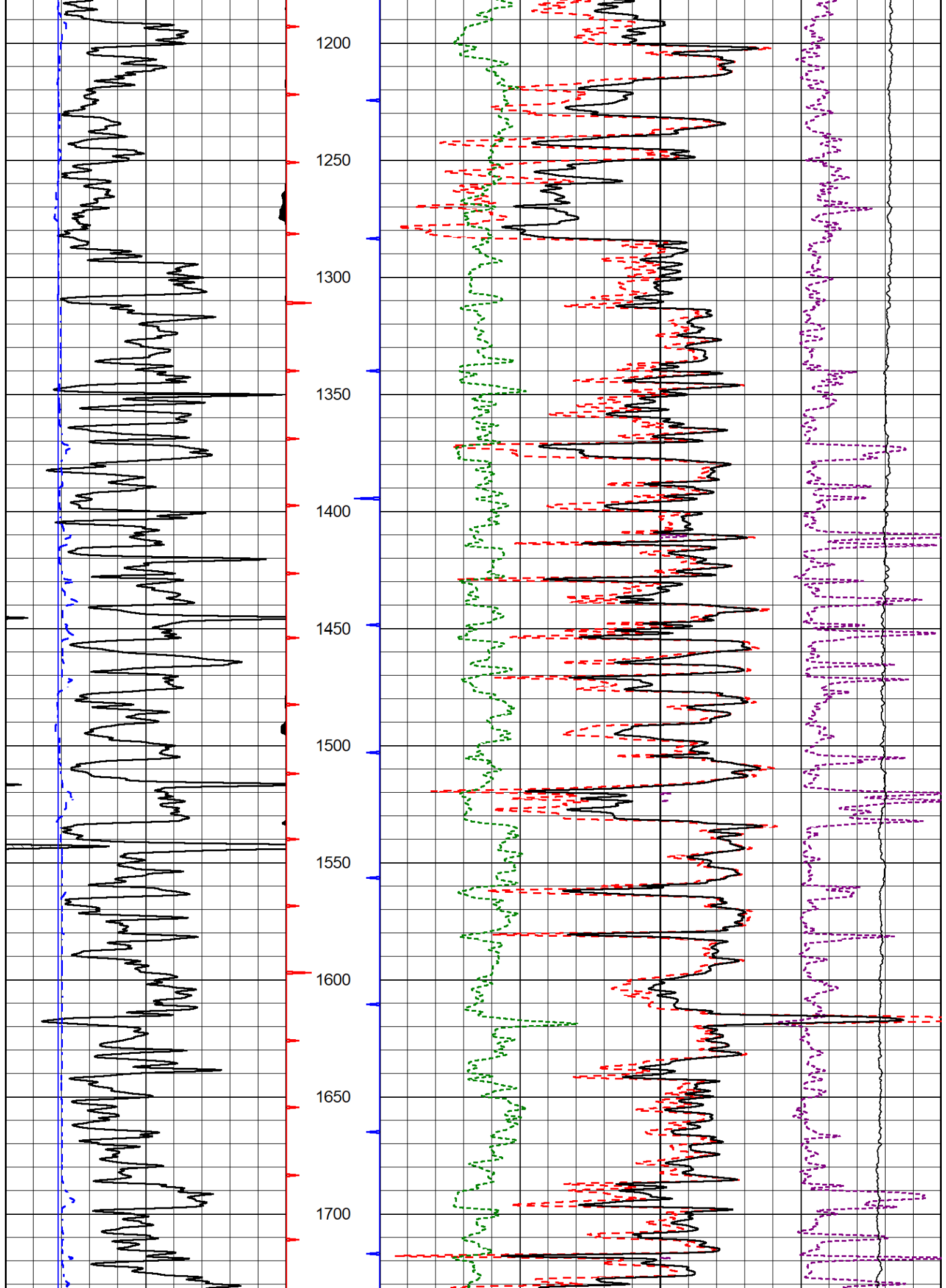
2" SCALE BULK DENSITY

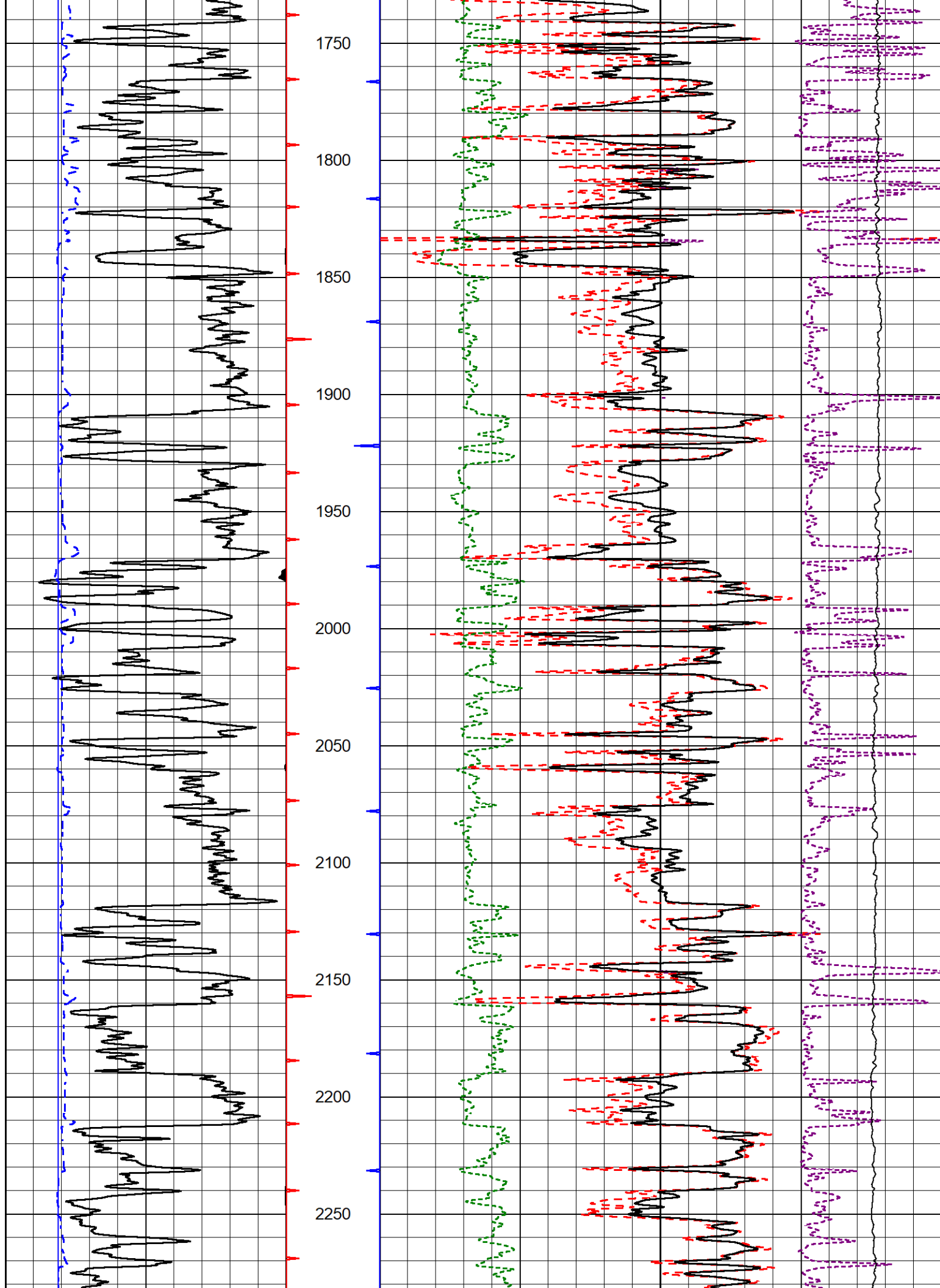
MAIN PASS

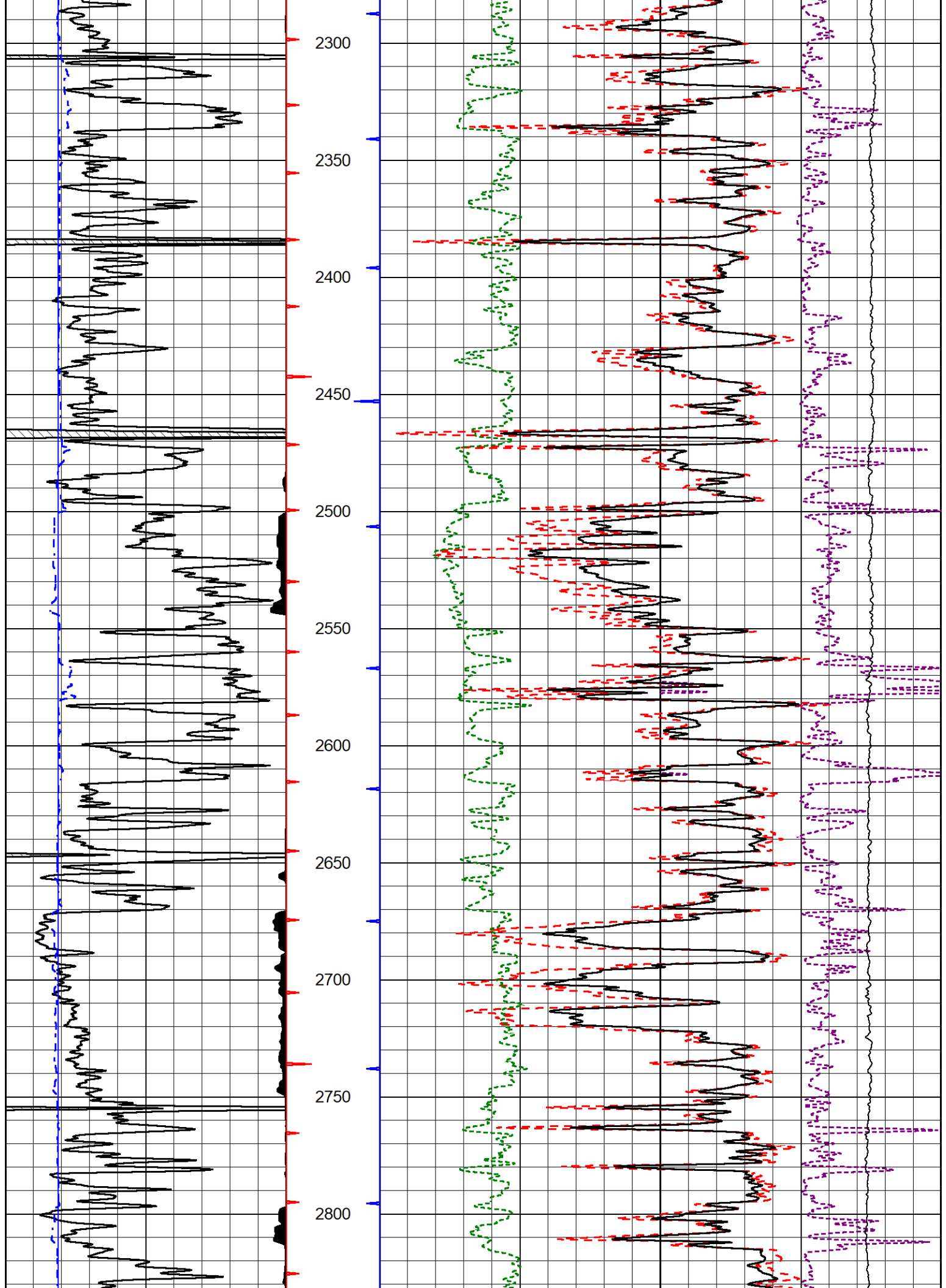
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Presentation Format _cdlpe
Dataset Creation Thu Aug 24 09:38:17 2023
Charted by Depth in Feet scaled 1:600

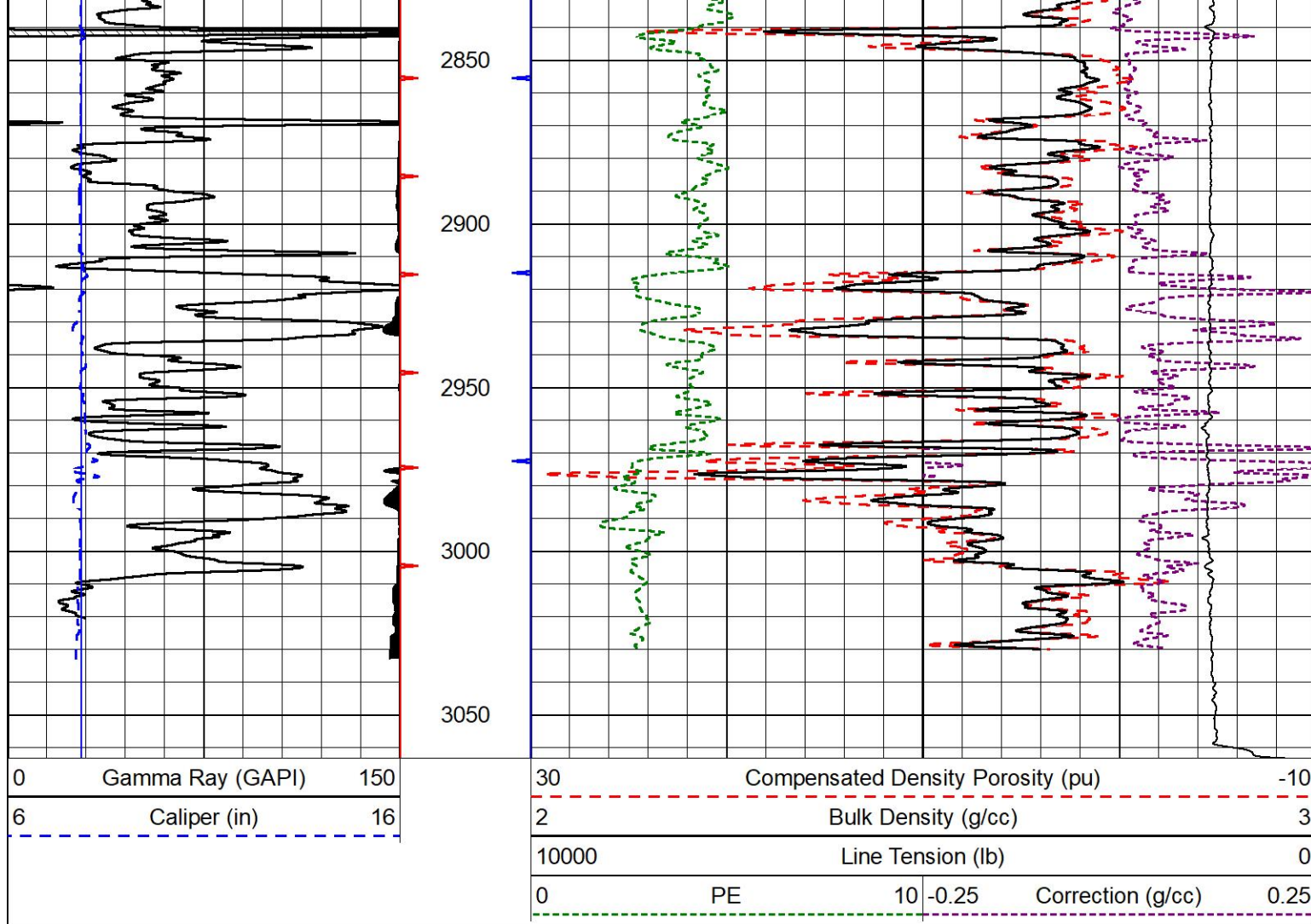
0	Gamma Ray (GAPI)	150	30	Compensated Density Porosity (pu)	-10
6	Caliper (in)	16	2	Bulk Density (g/cc)	3
			10000	Line Tension (lb)	0
			0	PE	10 -0.25
				Correction (g/cc)	0.25









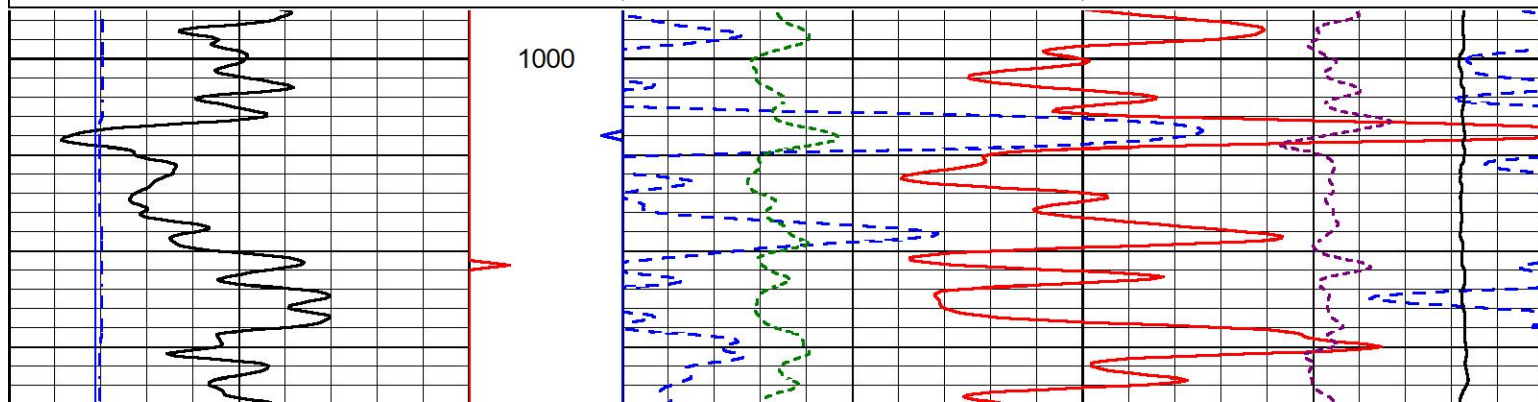
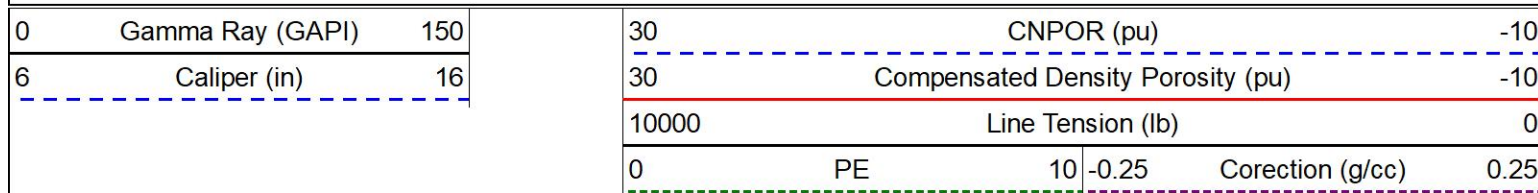


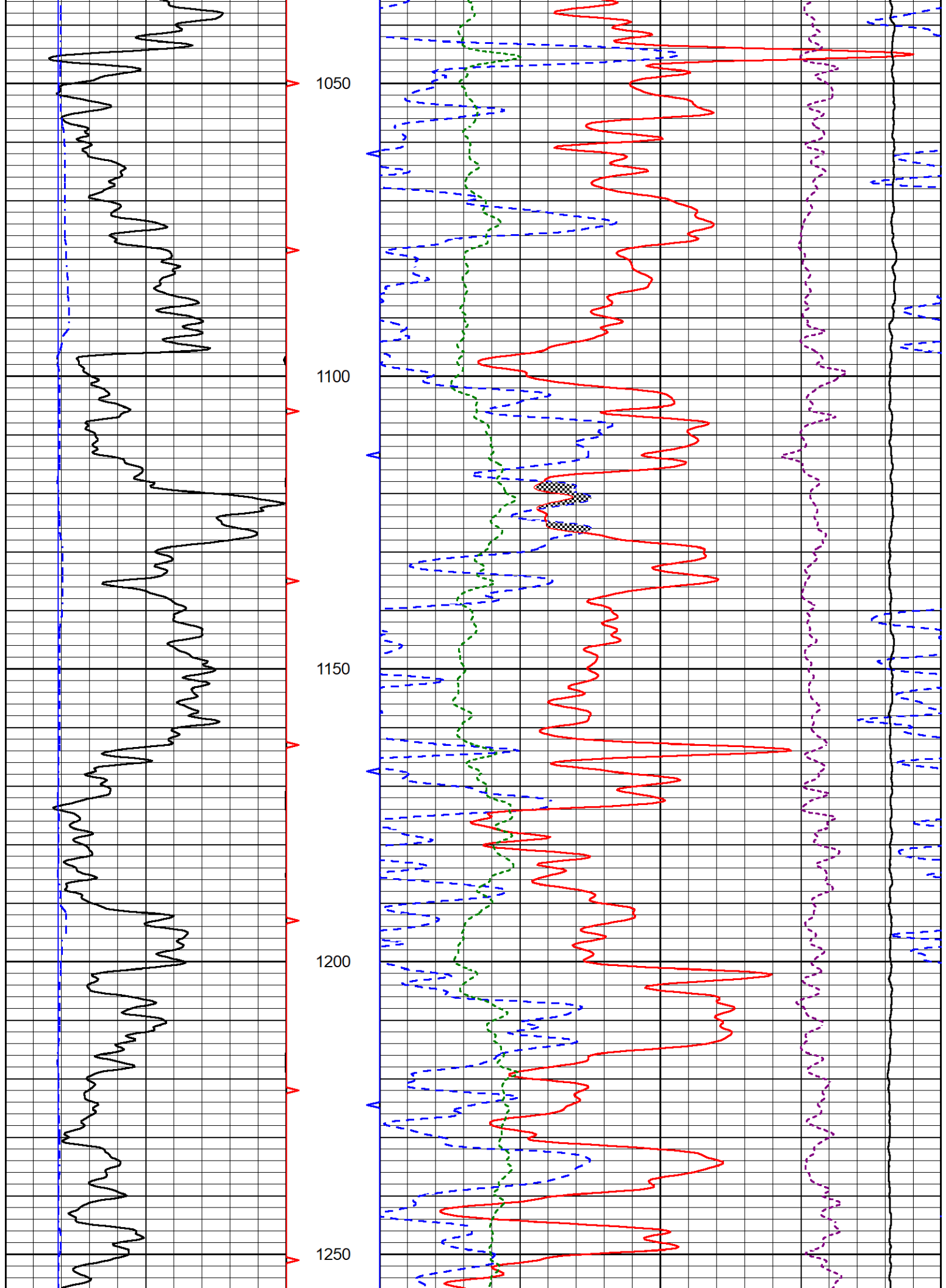
MIDWEST WIRELINE

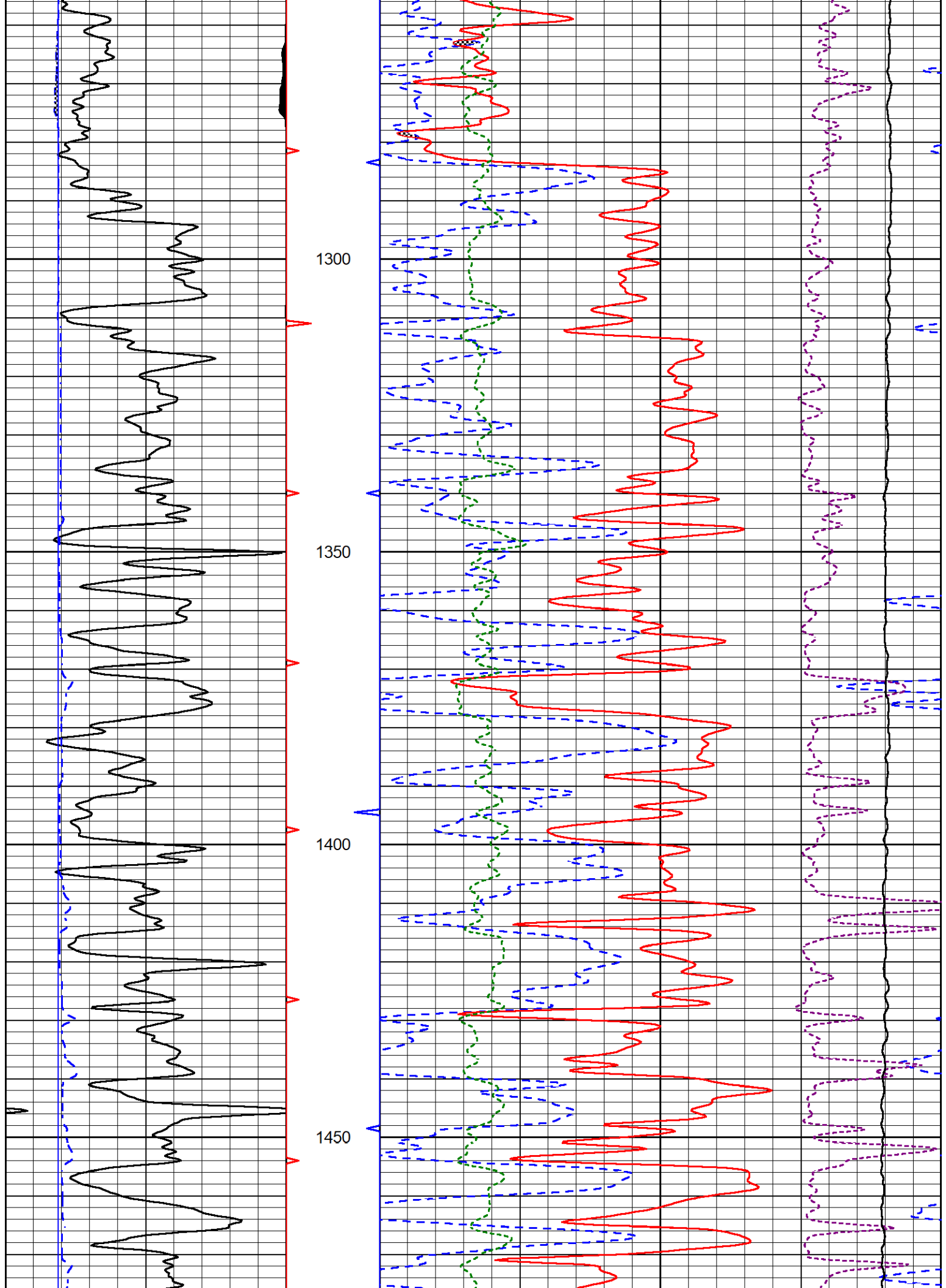
DETAIL SECTION

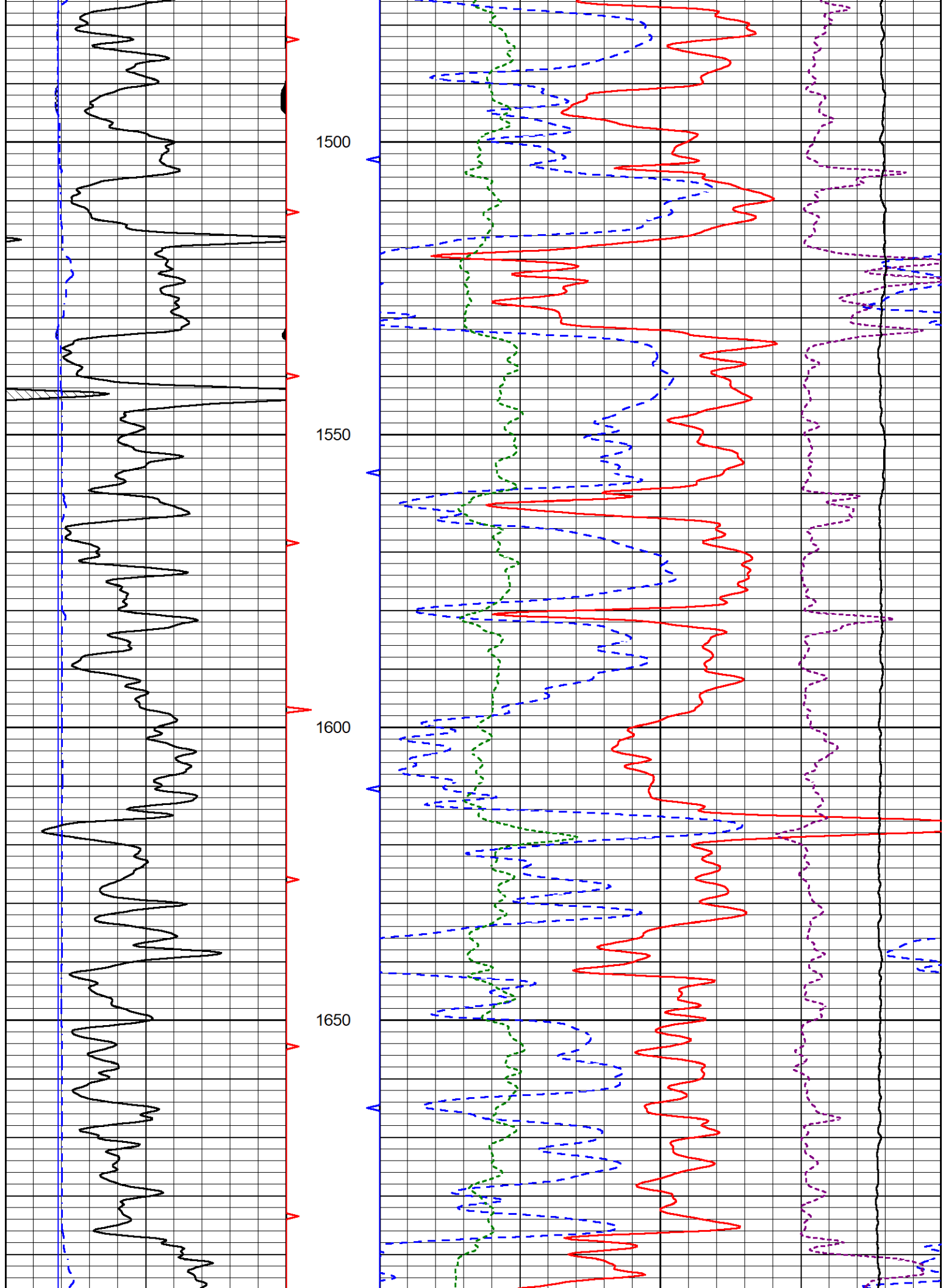
MAIN PASS

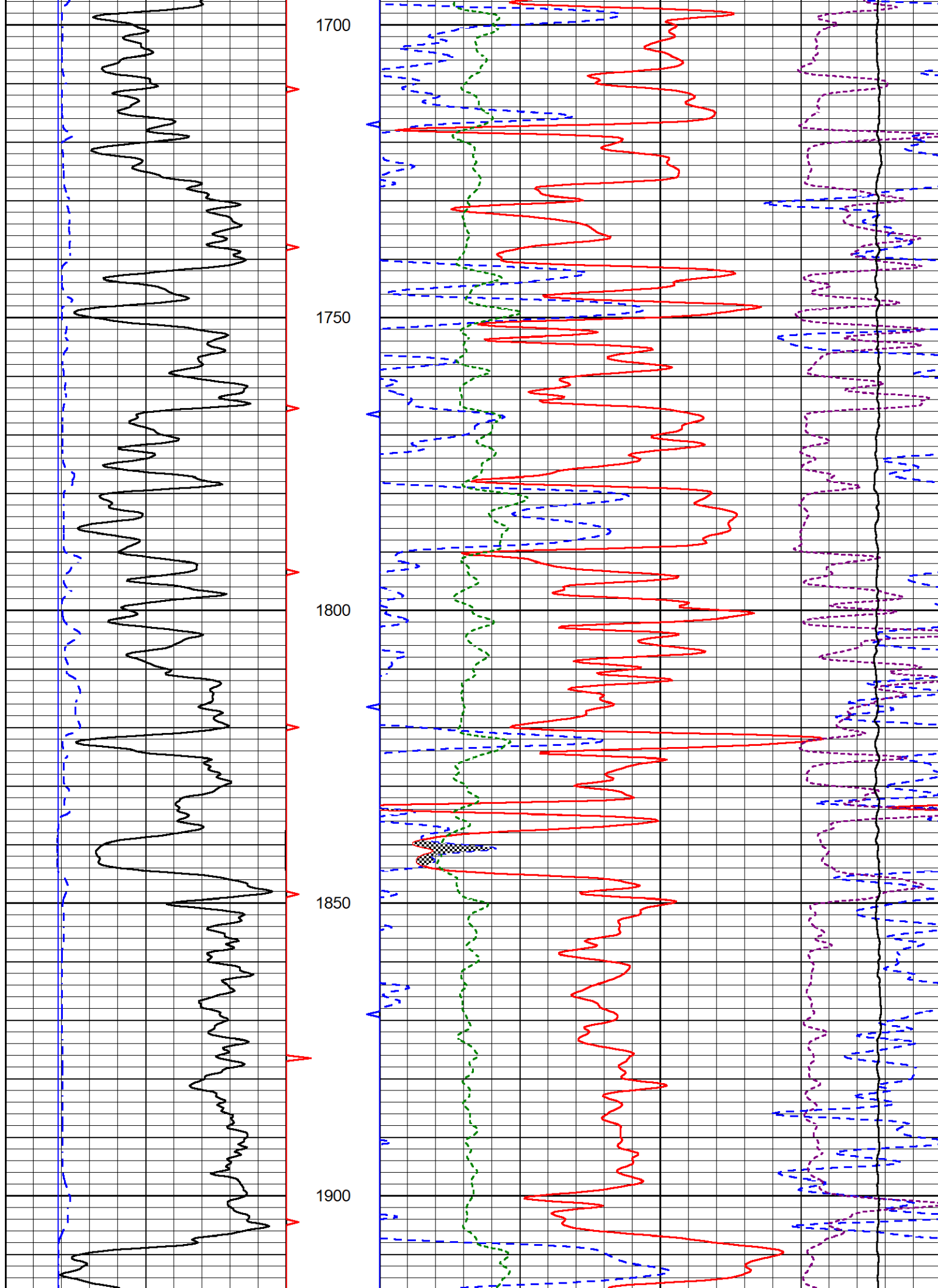
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 Dataset Pathname StkMI/pass3.1
 Presentation Format _CNDLS~4
 Dataset Creation Thu Aug 24 09:53:52 2023
 Charted by Depth in Feet scaled 1:240

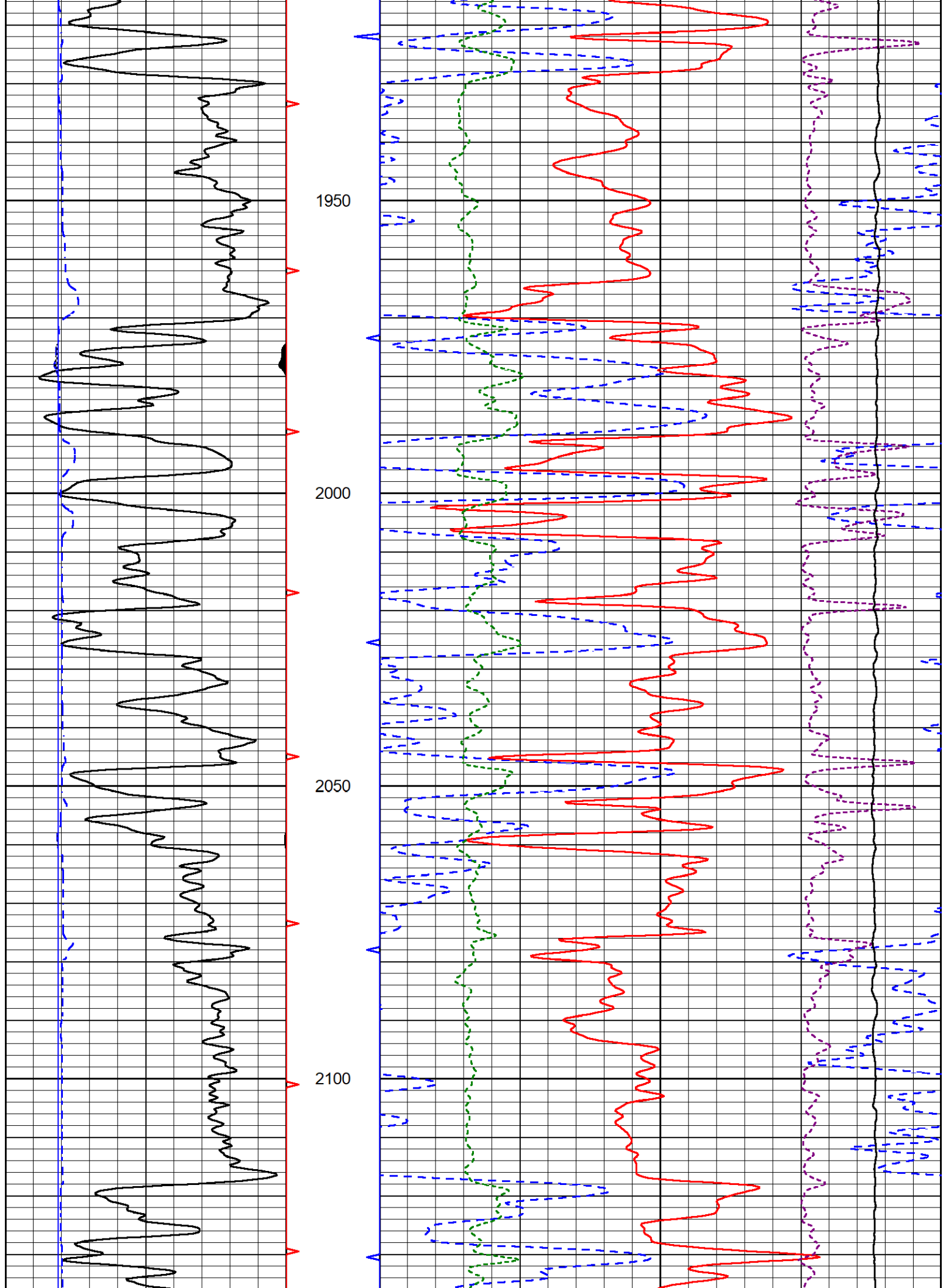


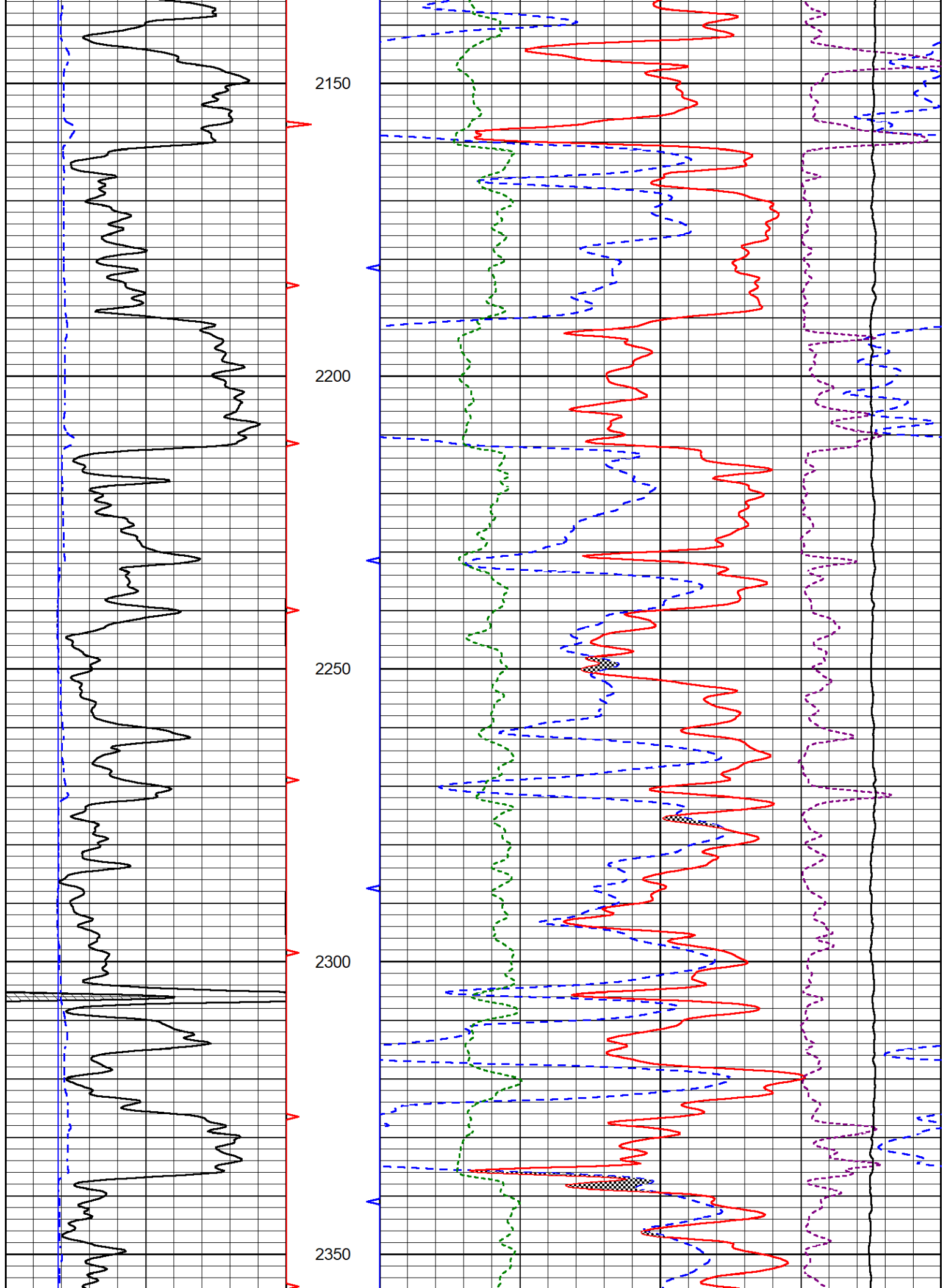


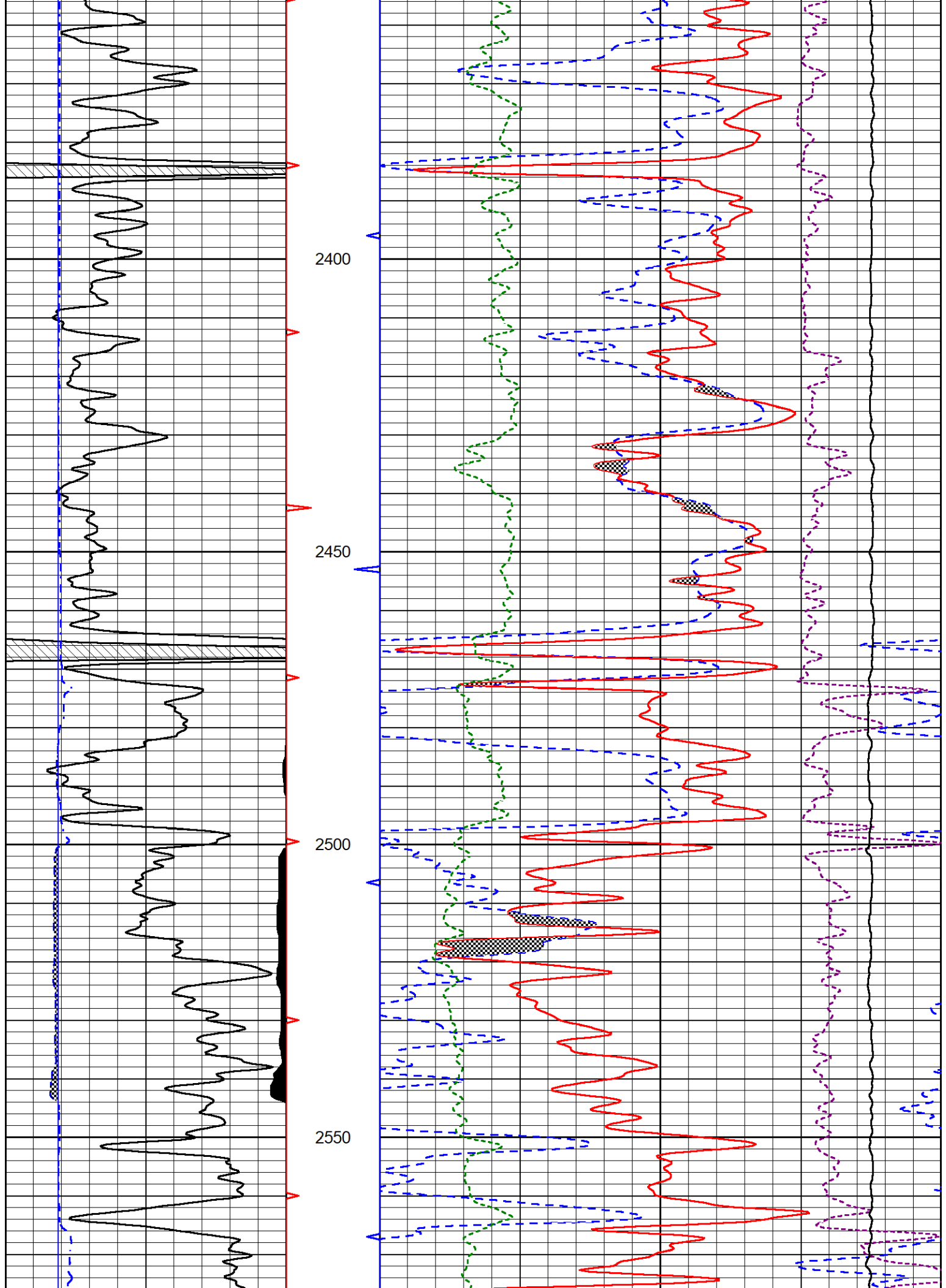


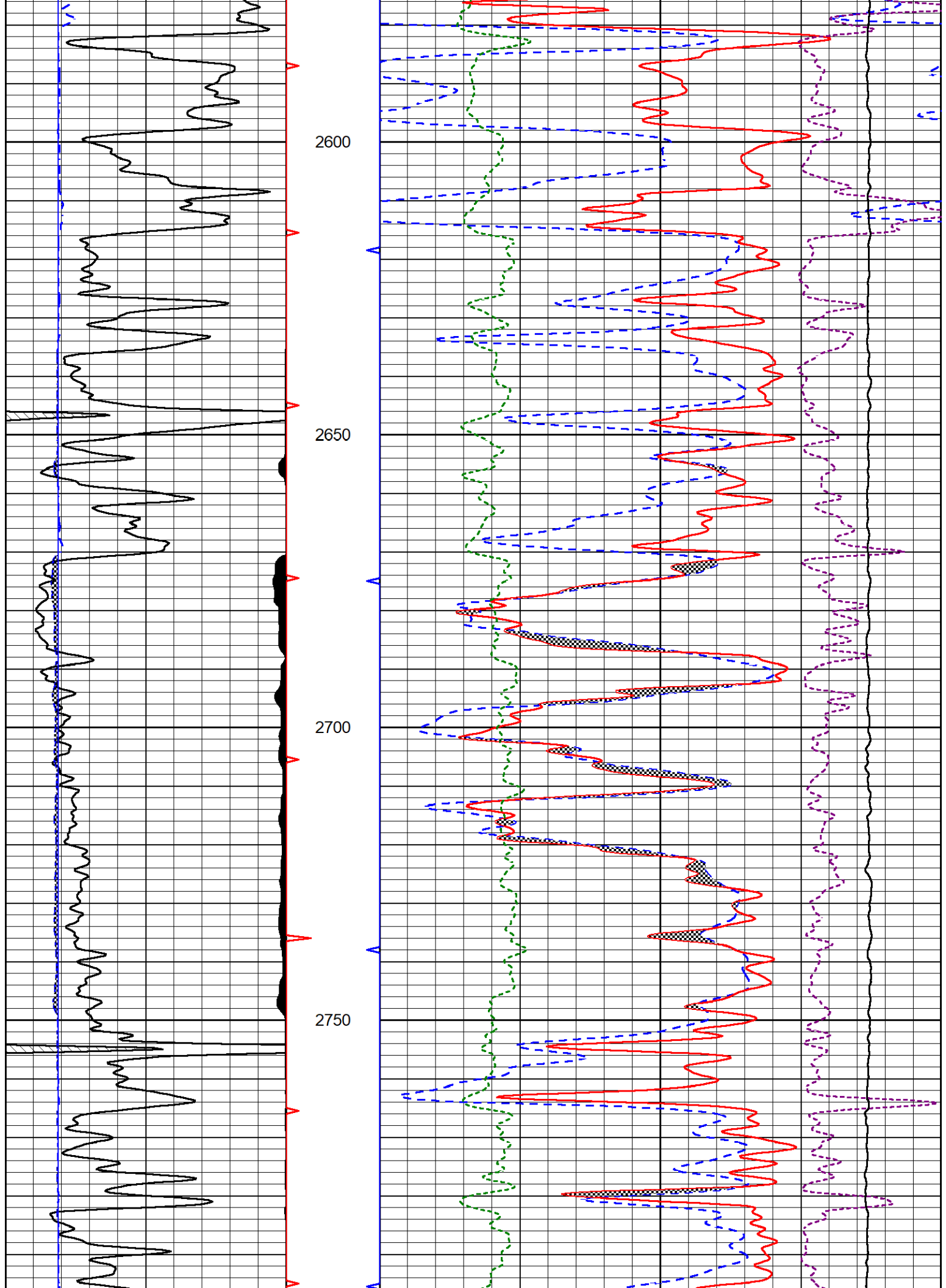


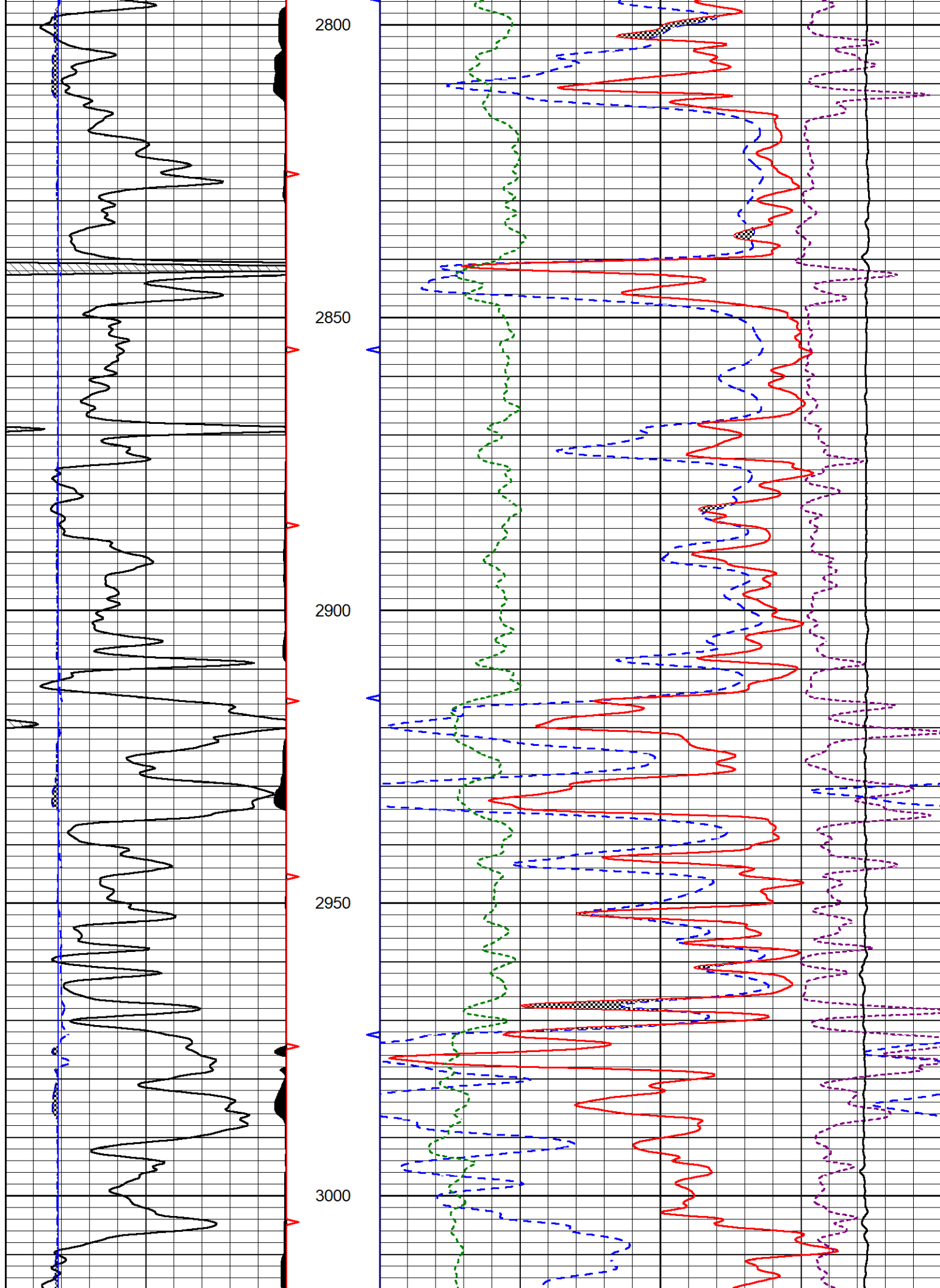


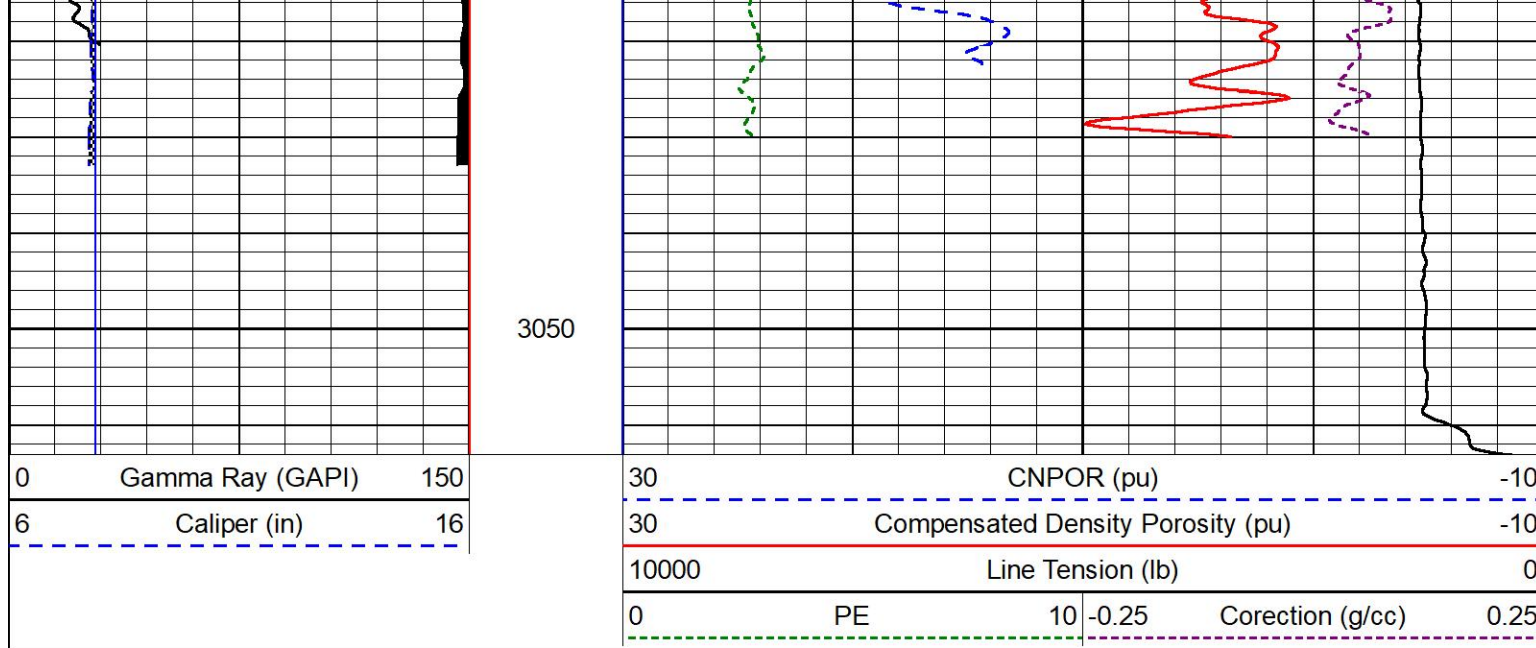










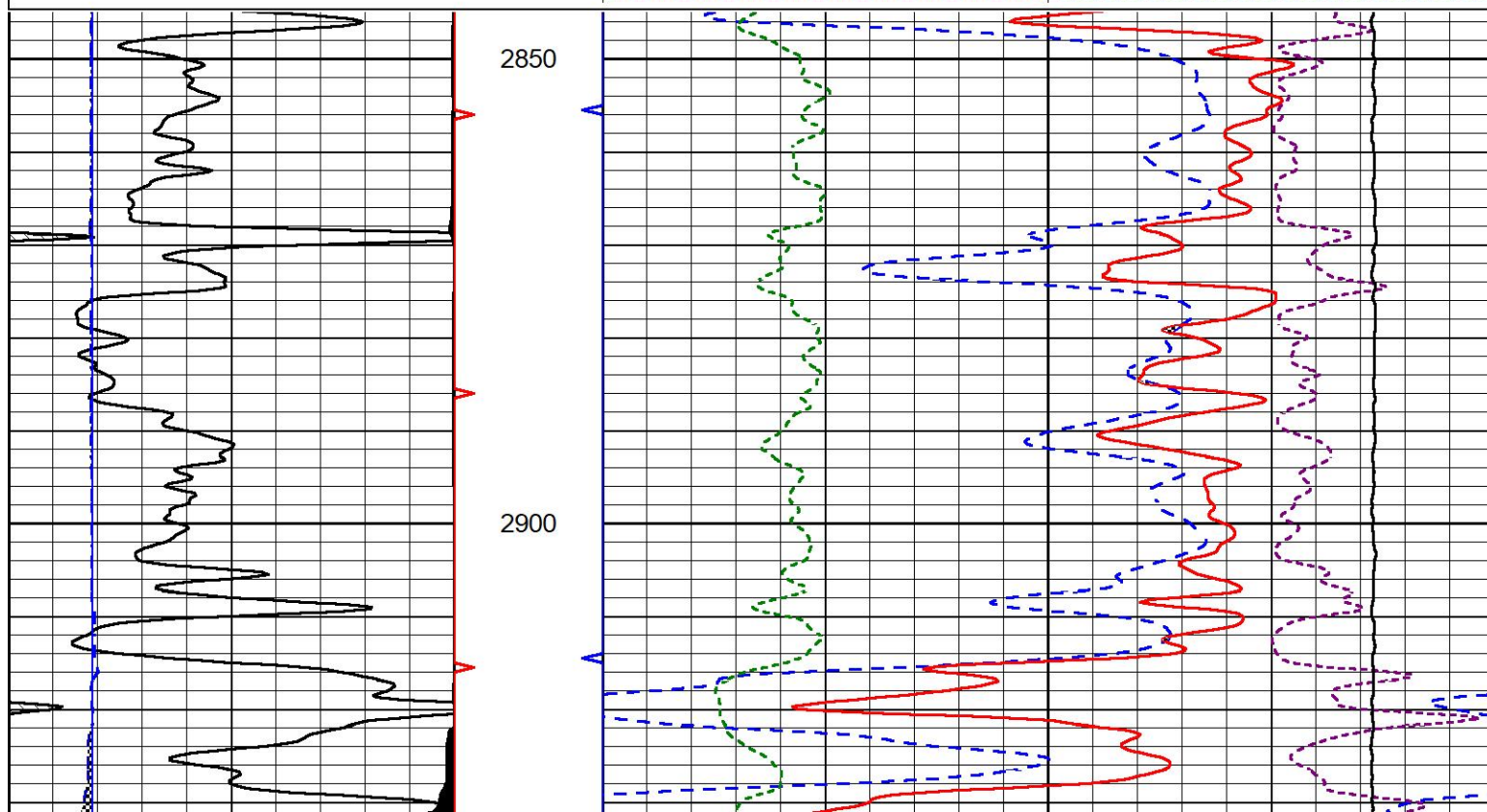
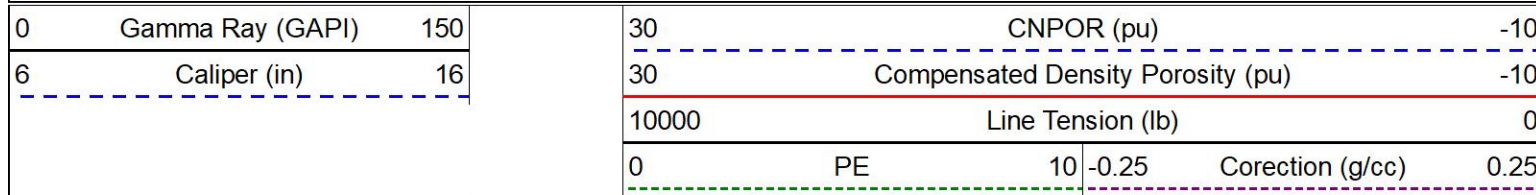


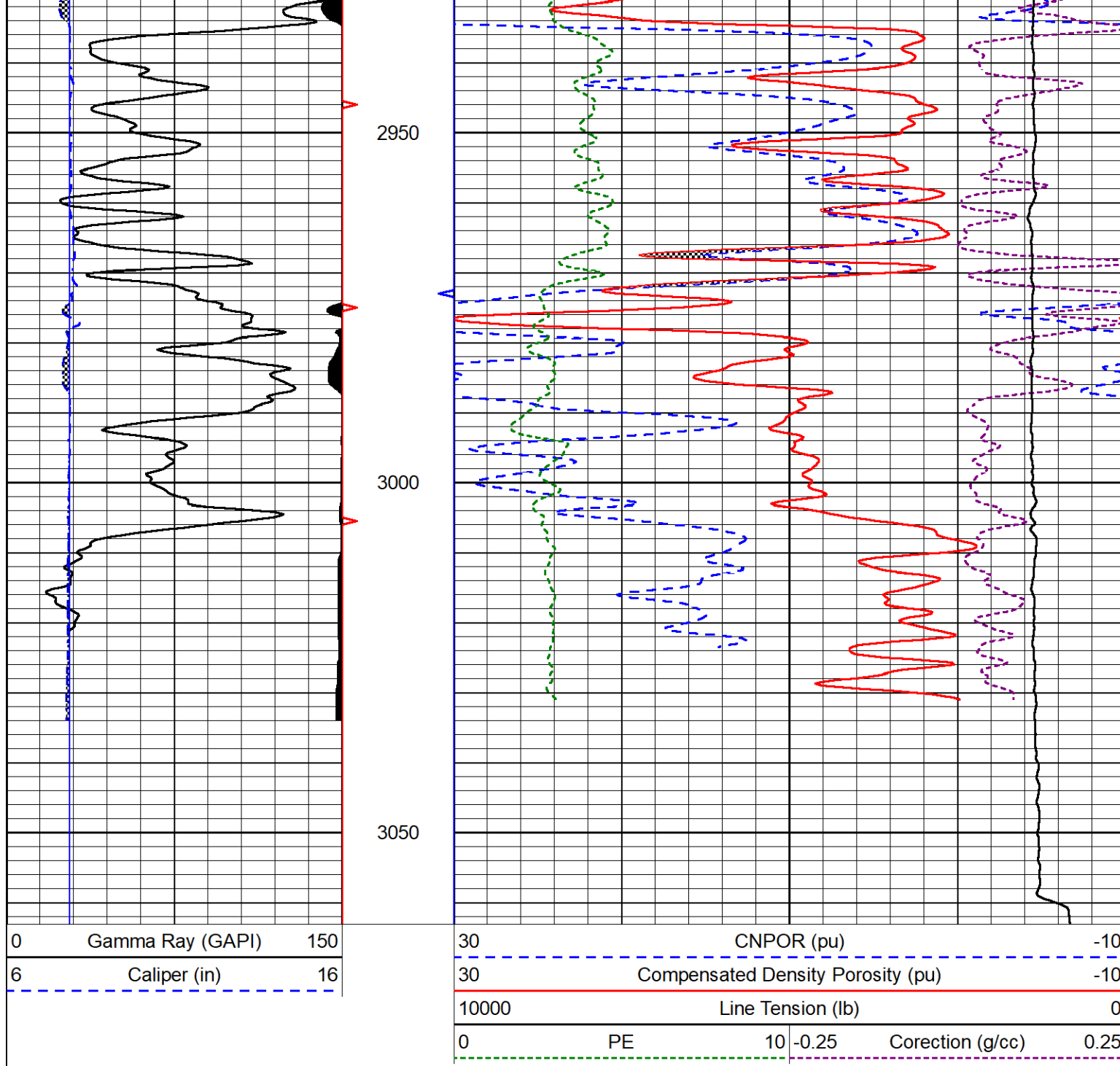
MIDWEST WIRELINE

REPEAT SECTION

REPEAT PASS

Database File lb_prochaska-rathbun unit #1.db
 Dataset Pathname StkMI/pass2.1
 Presentation Format _CNDLS~4
 Dataset Creation Thu Aug 24 09:10:04 2023
 Charted by Depth in Feet scaled 1:240





Calibration Report							
Database File	lb_prochaska-rathbun unit #1.db						
Dataset Pathname	StkMI/pass3.1						
Dataset Creation	Thu Aug 24 09:53:52 2023						
Dual Induction Calibration Report							
Serial-Model:		507-M&W					
Surface Cal Performed:							
		Readings		References		Results	
Loop:	Air	Loop	Air	Loop		m	b
Deep	68.570	638.100	0.000	255.800	mmho/m	0.500	-37.000
Medium	184.288	716.191	0.000	255.800	mmho/m	0.430	-75.000

Microlog Calibration Report							
Serial-Model: Performed:				401-PSIML Mon Jun 5 16:37:07 2023			
	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	20000.0000	-0.4000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	21000.0000	-0.7500
Caliper	1.0052	1.0858	5.0000	16.5000	in	142.7190	-138.7800

LITHODENSITY Calibration Report									
Serial Number:		704-10							
Tool Model:		STEP LITHO							
Performed:		Fri Jun 23 15:26:01 2023							
Source:									
	Win1	Win2	Win3	Win4	Win5	Win6	Win7	Win8	
Background:									
SS:	51	54	202	252	21	70	42	1	cps
LS:	85	96	363	462	53	147	97	3	cps
Aluminum:									
SS:	870	1018	2321	2004	37	71	43	2	cps
LS:	1057	1828	3315	1570	61	147	91	5	cps
Magnesium:									
SS:	1459	1669	3829	2914	42	70	46	3	cps
LS:	4526	7550	13047	4982	98	135	93	13	cps
Aluminum+Iron:									
SS:	553	719	1939	1750	37	72	45	2	cps
LS:	613	1297	2812	1404	60	146	96	4	cps
		Density			PE				
		Actual	Calibrated		Actual	Calibrated	Quality		
Background:									
SS:							0.245		
LS:							0.205		
Aluminum:									
SS:		2.6000	2.6000	g/cc			0.240		
LS:		2.6000	2.6000	g/cc			0.236		
Magnesium:									
SS:		1.6800	1.6800	g/cc	2.5700	2.5700	0.210		
LS:		1.6800	1.6800	g/cc	2.5700	2.5700	0.184		
Aluminum+Iron:									
SS:						6.1800	0.228		
LS:						6.1800	0.206		

Before Survey									
Performed:		Wed Feb 9 13:15:42 2022							
SS:	0	0	0	0	0	0	0	0	cps
LS:	1370	1580	3705	3037	48	80	50	4	cps
After Survey									
Performed:		Wed Feb 9 13:16:02 2022							
SS:	0	0	0	0	0	0	0	0	cps
LS:	1400	1600	3800	3100	60	100	70	6	cps

Caliper:	Reference:	Reading:
Small Ring:	6.0 in	0.2
Large Ring:	15.0 in	0.8
Gain:	16.161	
Offset:	1.100	

Compensated Neutron Calibration Report

Serial Number: 207
Tool Model: M&W

CALIBRATION

Detector	Readings	Target	Normalization
Short Space	6240.00 cps	1000.00 cps	1.6025
Long Space	460.00 cps	1000.00 cps	1.9500

PRE-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	
3)	Short Space	cps		
	Long Space	cps	pu	

POST-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	pu
3)	Short Space	cps		
	Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: 106
Tool Model: M&W
Performed: Tue Aug 22 07:35:27 2023

Calibrator Value: 500.0 GAPI

Background Reading: 24.0 cps
Calibrator Reading: 637.0 cps

Sensitivity: 0.5500 GAPI/cps



Company LB Exploration, Inc.
Well Prochaska/Rathbun Unit #1
Field Ellsworth
County Ellsworth
State Kansas