MIDWEST WIRELINE

DUAL INDUCTION LOG

Company EPOC LLC
Well Eck 'A' #1
Field Hazlett
County Butler
State Kansas

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Well Eck 'A' #1
Field Hazlett
County Butler State Kansas

Location: API # : 15-015-24168-00-00
SE NE SW NW
1835 FNL & 1075 FWL
SEC 32 TWP 23S RGE 5E

Other Services
CNL/CDL
MEL

Permanent Datum Ground Level Elevation 1483
Log Measured From Kelly Bushing
Drilling Measured From Kelly Bushing

Elevation
K.B. 1489
D.F.
G.L. 1483

Date	8/3/2022		
Run Number	One		
Depth Driller	2550		
Depth Logger	2547		
Bottom Logged Interval	2546		
Top Log Interval	200		
Casing Driller	8.625 @ 210		
Casing Logger	210		
Bit Size	7.875		
Type Fluid in Hole	Chemical		
Salinity,ppm CL			
Density / Viscosity	9.5 49		
pH / Fluid Loss			
Source of Sample	Flowline		
Rm @ Meas. Temp	1.0.9 @ 72		
Rmf @ Meas. Temp	0.68 @ 72		
Rmc @ Meas. Temp	1.22 @ 72		
Source of Rmf / Rmc	Charts		
Rm @ BHT	0.64 @ 102		
Operating Rig Time	2 Hours		
Max Rec. Temp. F	102		
Equipment Number	P-24		
Location	Hays		
Recorded By	T. Martin		
Witnessed By	Ray Gilbert	Bill Stout	

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Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

Newton, KS, ~20 E on 1st Ave to
Purity Spgs Rd, 2 S, 1/8 E, S into

Log Measured From: Kelly Bushing 6 Ft. Above Permanent Datum

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

Your Midwest Wireline Crew	This Log Record Was Witnessed By
Engineer: T. Martin	Primary Witness: Ray Gilbert
Operator:	Secondary Witness: Bill Stout
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
GR	40.33		GR-M&W (106)	3.00	3.50	50.00
CNLSC	37.23		CNT-M&W (207-MW)	5.00	3.50	100.00
CNSSC	36.48					
			CDL-M&W (302-02)	8.50	4.00	250.00
LSD	28.18					
DCAL	28.17					
SSD	27.68					
			ML-PSIML (402)	7.58	4.00	65.00
MCAL	19.58					
MI	19.58					
MN	19.58					
RLL3F	15.50					
RLL3	15.50					
			DIL-M&W (507)	18.25	3.50	220.00
CILD	8.33					
CILM	4.50					
SP	0.20					

Dataset:	eopc_eck a #1.db: field/well/StkMl/pass3.1
Total length:	42.33 ft
Total weight:	685.00 lb
O.D.:	4.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\eopc_eck a #1.db
Dataset field/well/StkMI/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	102	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	-100	80	Off	2547

Variable Description

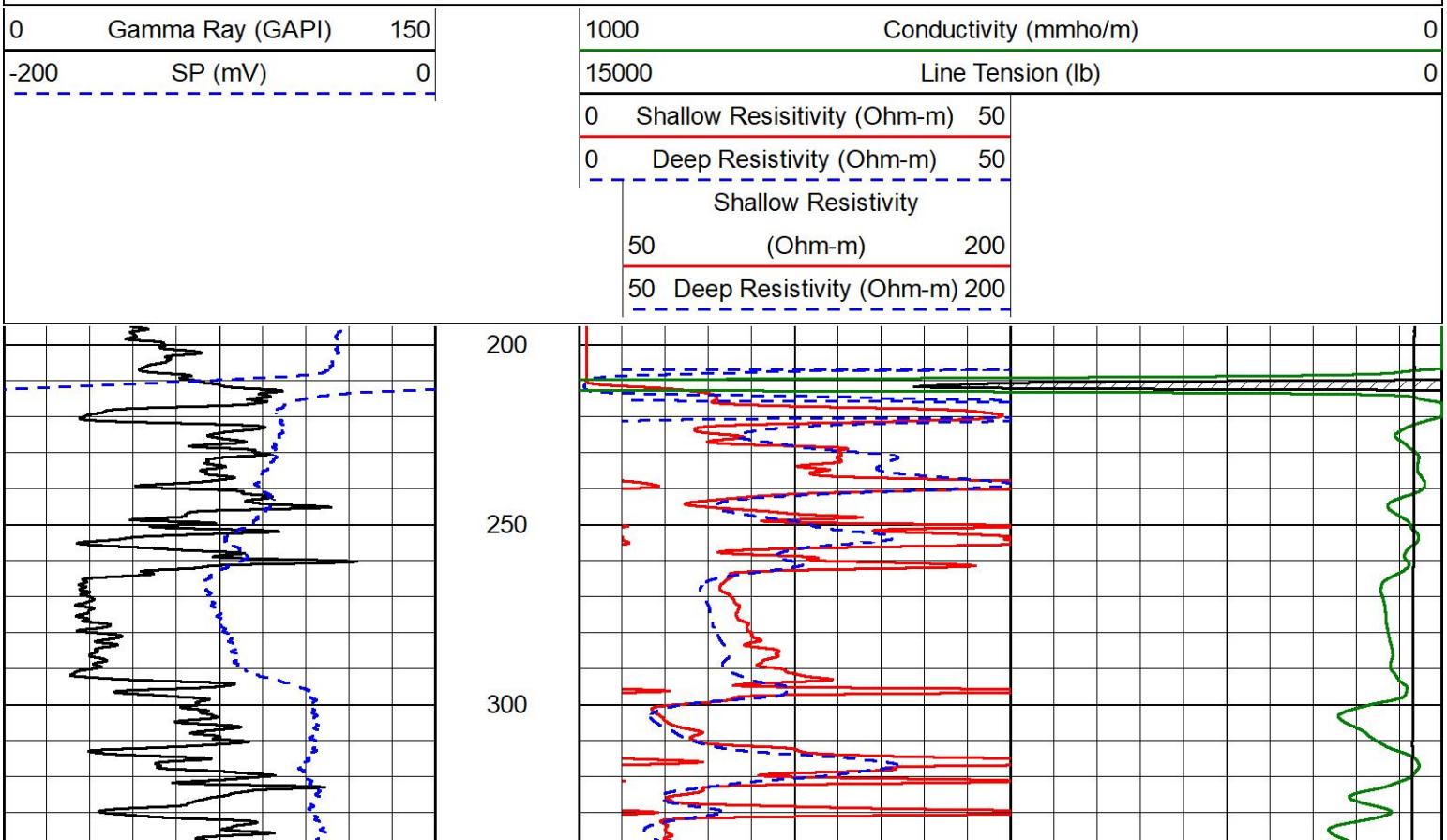
A : Cement Factor (a)
BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
FLUIDDEN : Fluid Density
M : Cement Exp (m)
MATRXDEN : Matrix Density
NPORSEL : Neutron Porosity Curve Select
PERFS : Perforation Flag
SNDERR : Deep Sonde Error Correction
SNDERRM : Medium Sonde Error Correction
SPSHIFT : S.P. Baseline Offset
SRFTEMP : Surface Temperature
SZCOR : CN Size Cor. ?
TDEPTH : Total Depth

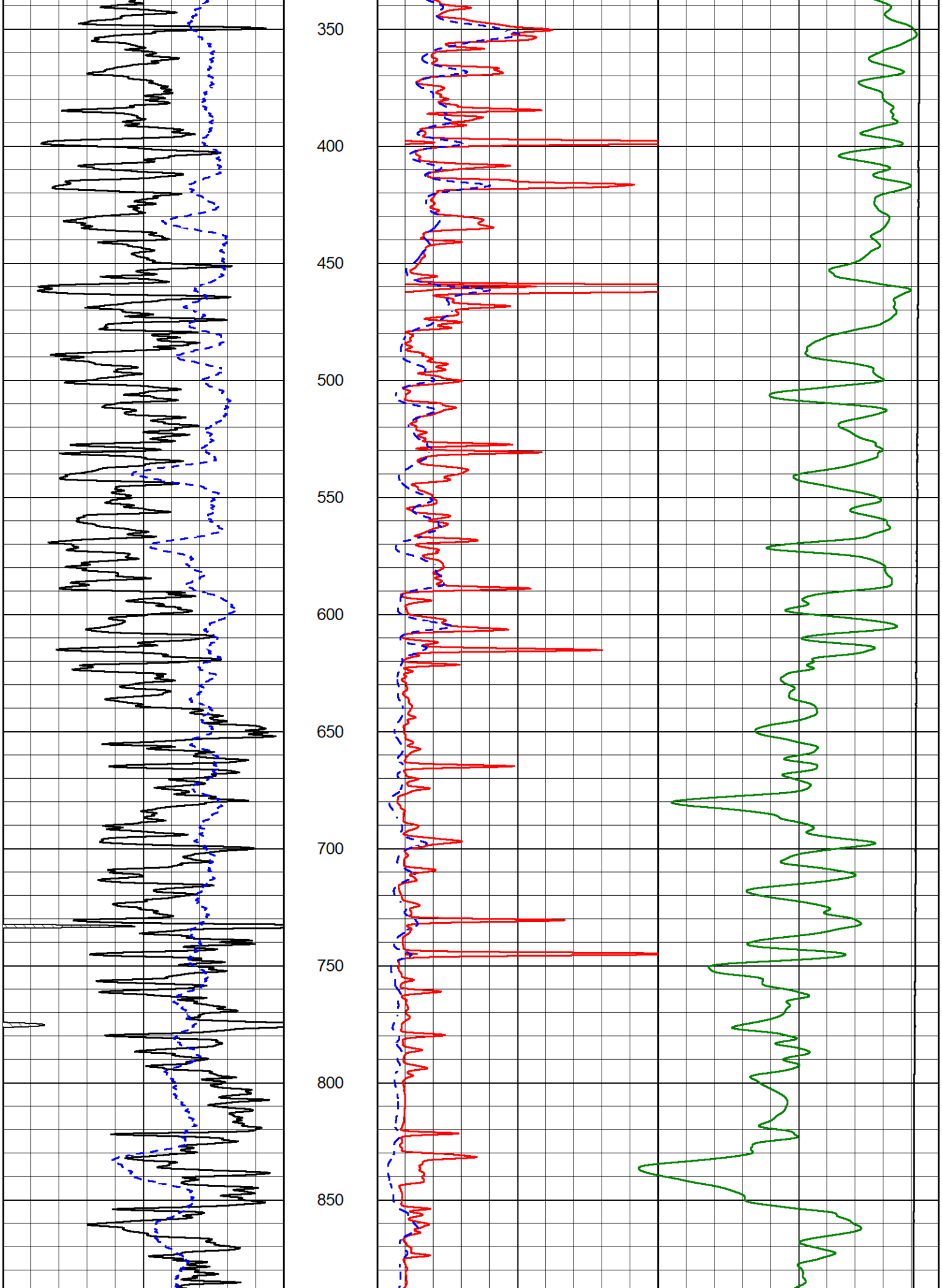
MIDWEST WIRELINE

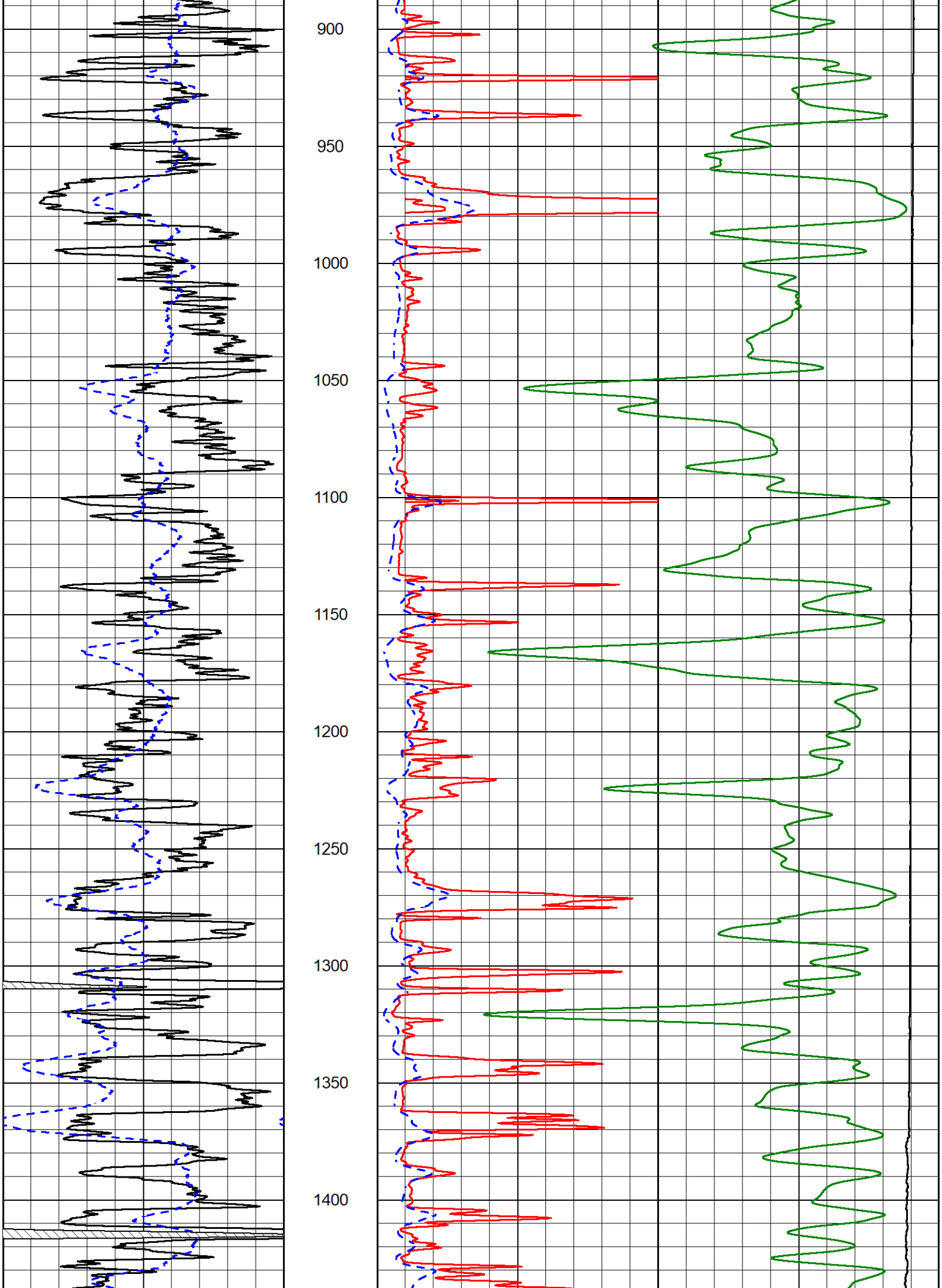
2" SCALE RESISTIVITY

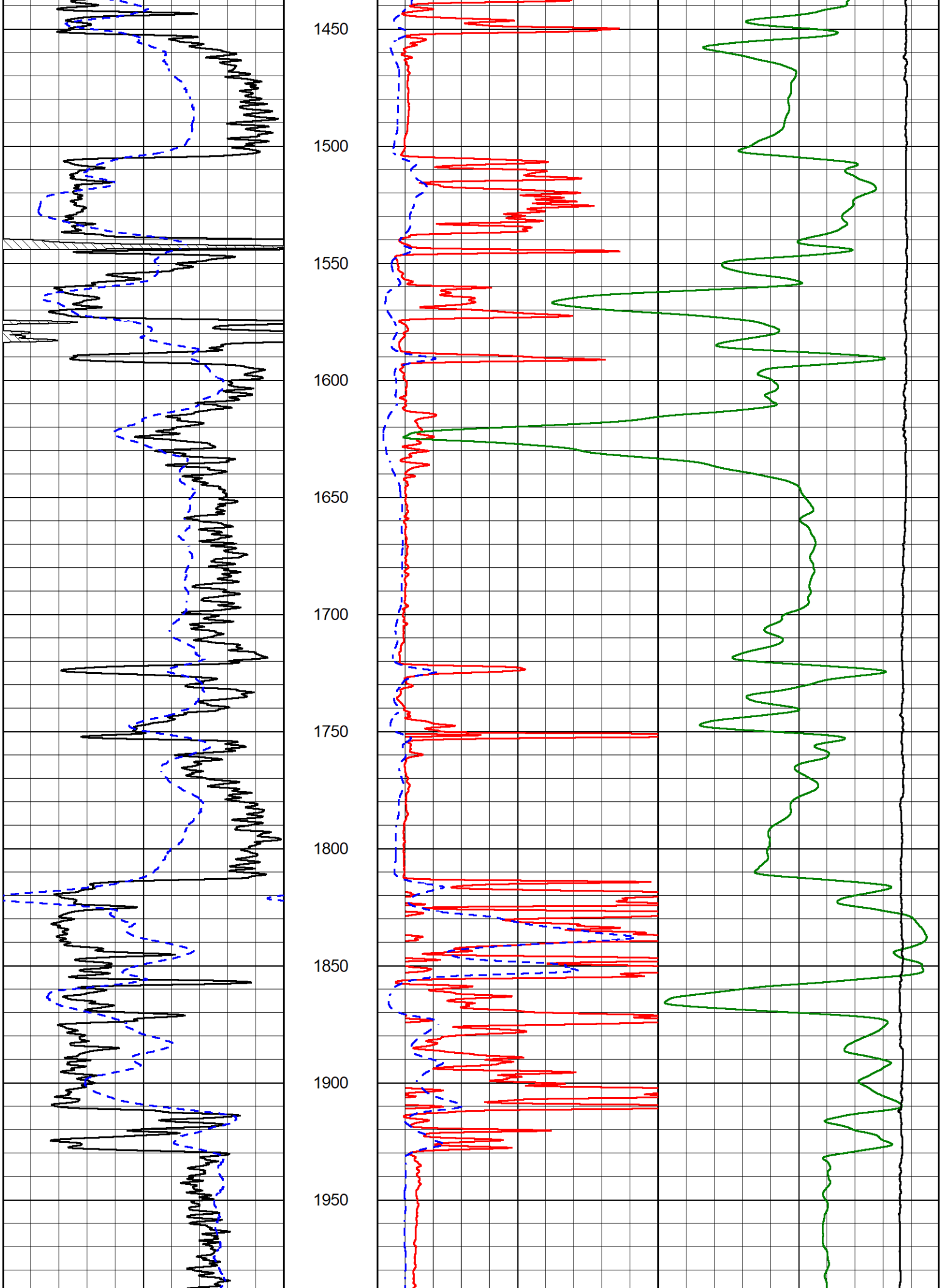
MAIN PASS

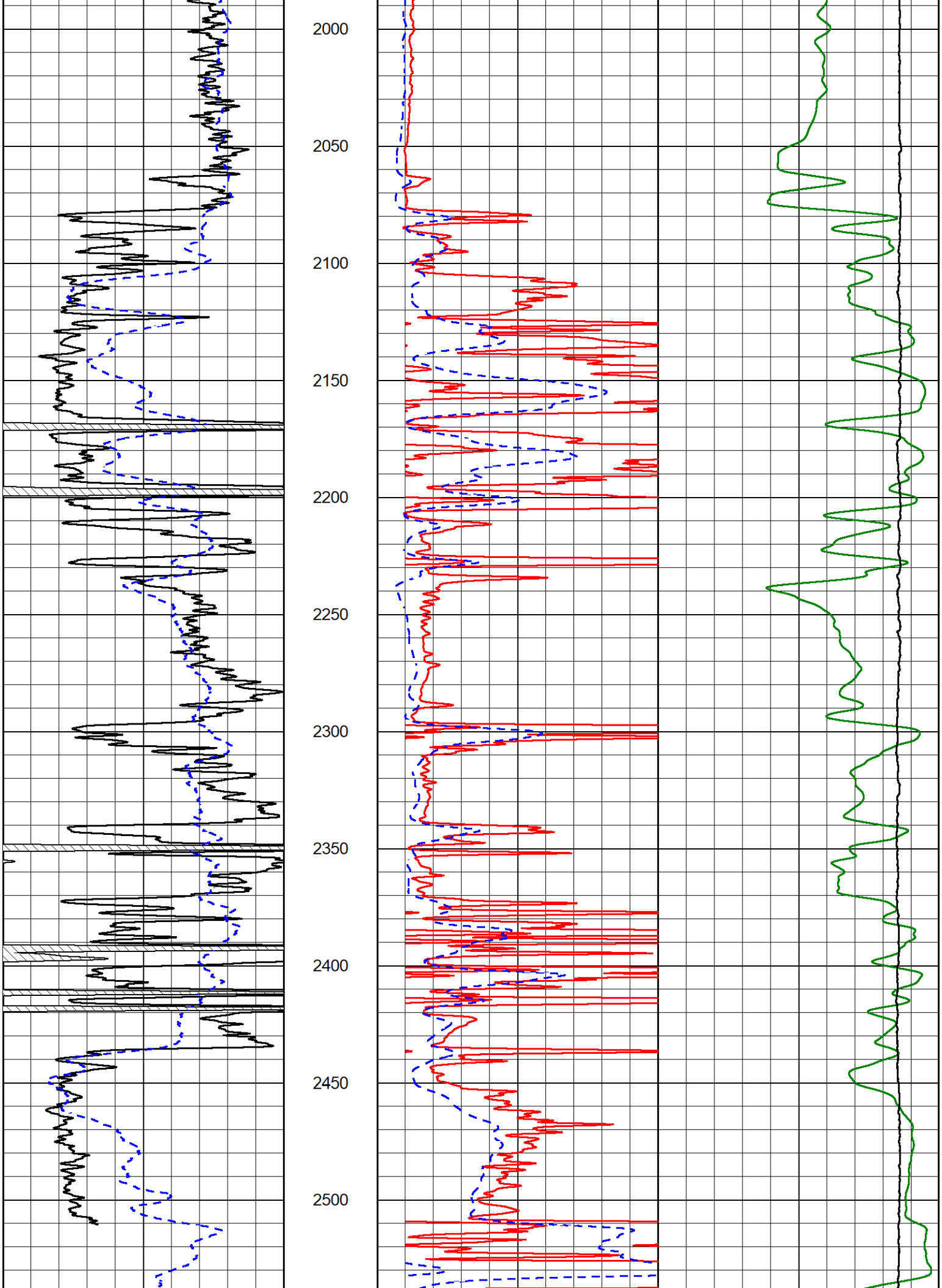
Database File	eopc_eck a #1.db
Dataset Pathname	StkMI/pass3.2
Presentation Format	_dil2in
Dataset Creation	Wed Aug 03 12:45:56 2022
Charted by	Depth in Feet scaled 1:600

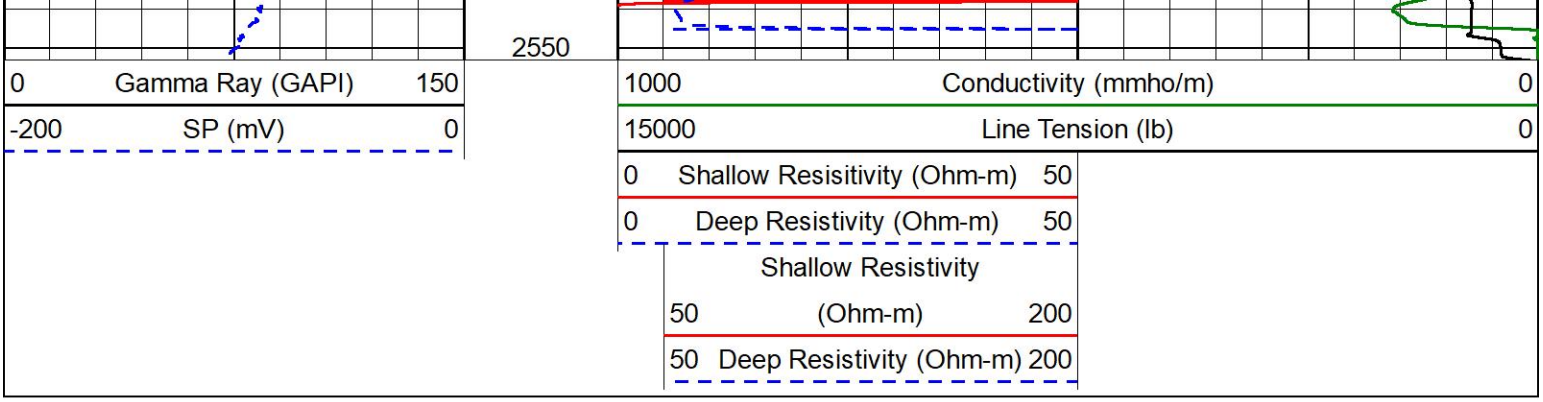



350
400
450
500
550
600
650
700
750
800
850


900
950
1000
1050
1100
1150
1200
1250
1300
1350
1400


1450
1500
1550
1600
1650
1700
1750
1800
1850
1900
1950


2000
2050
2100
2150
2200
2250
2300
2350
2400
2450
2500

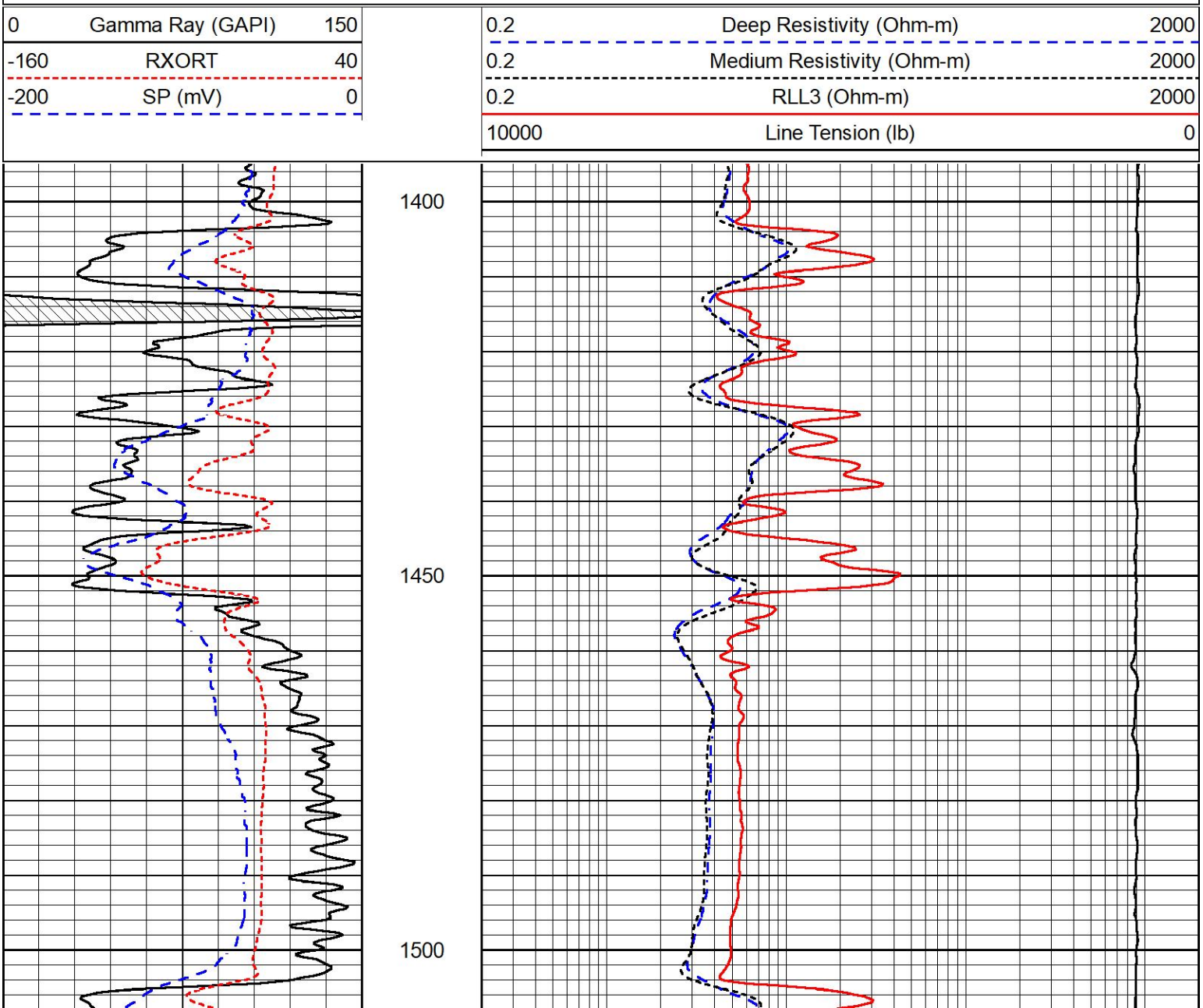


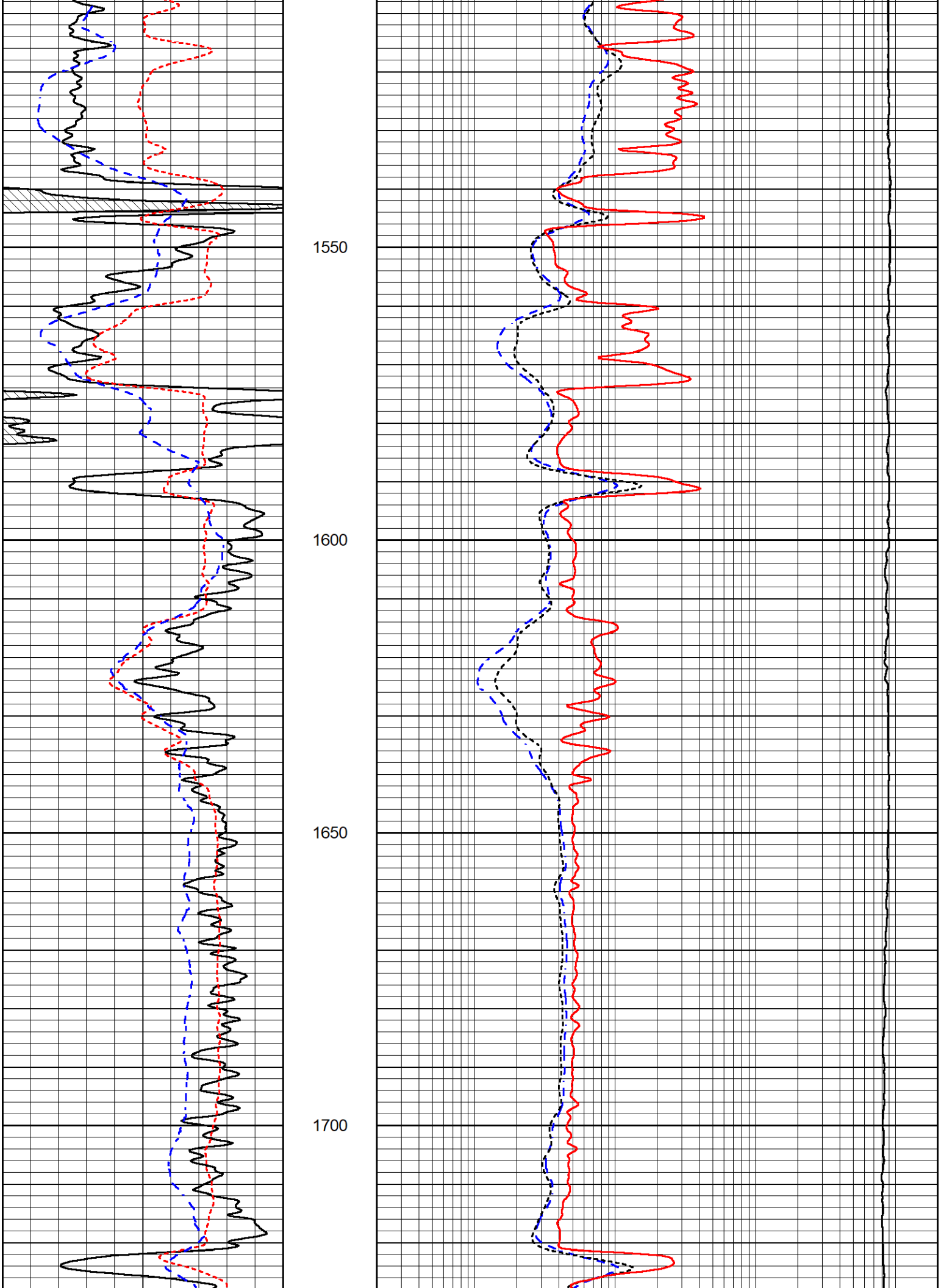
MIDWEST WIRELINE

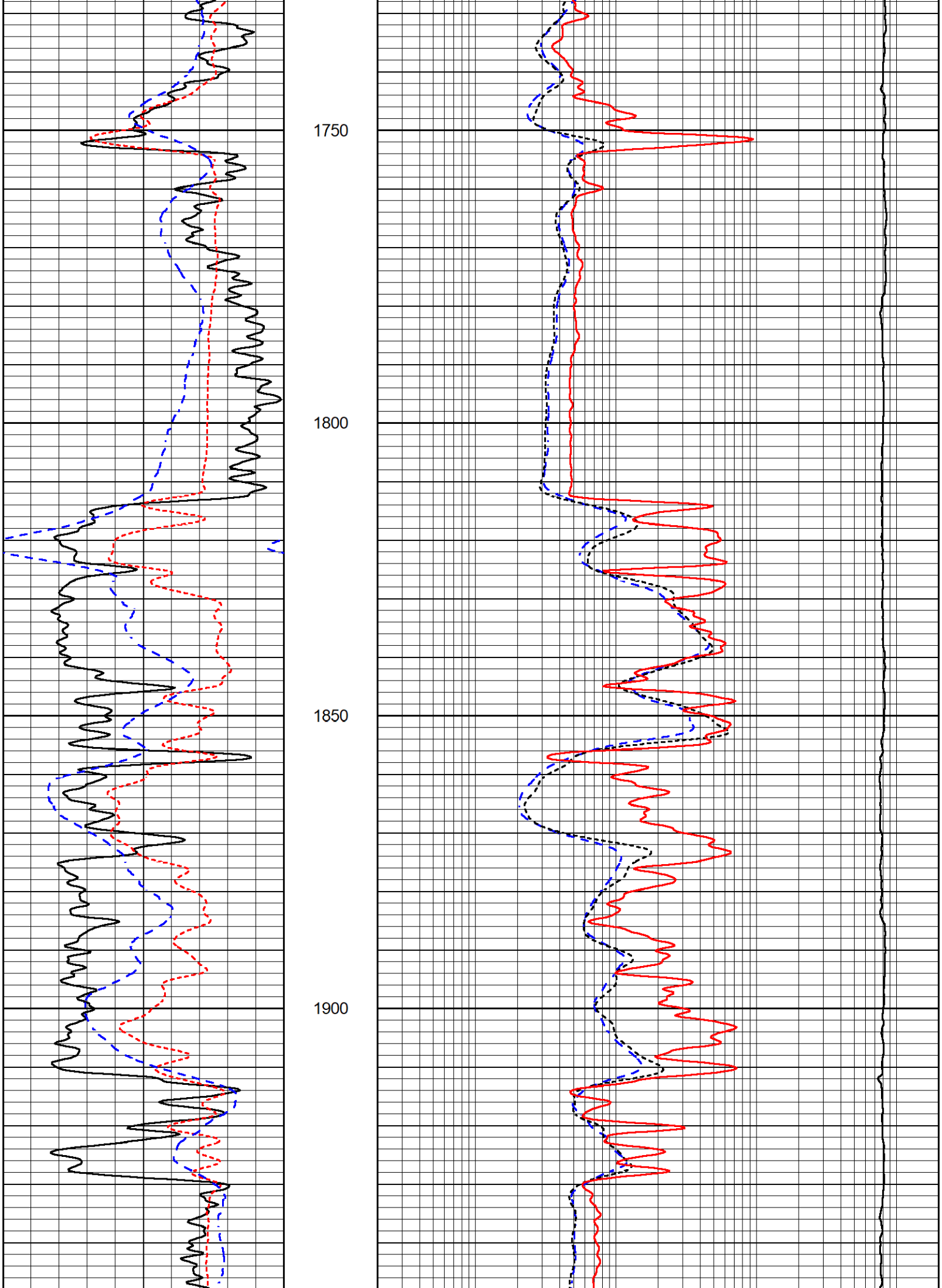
DETAIL SECTION

MAIN PASS

Database File	eopc_eck a #1.db
Dataset Pathname	StkMI/pass3.1
Presentation Format	_dil
Dataset Creation	Wed Aug 03 12:46:21 2022
Charted by	Depth in Feet scaled 1:240




1550
1600
1650
1700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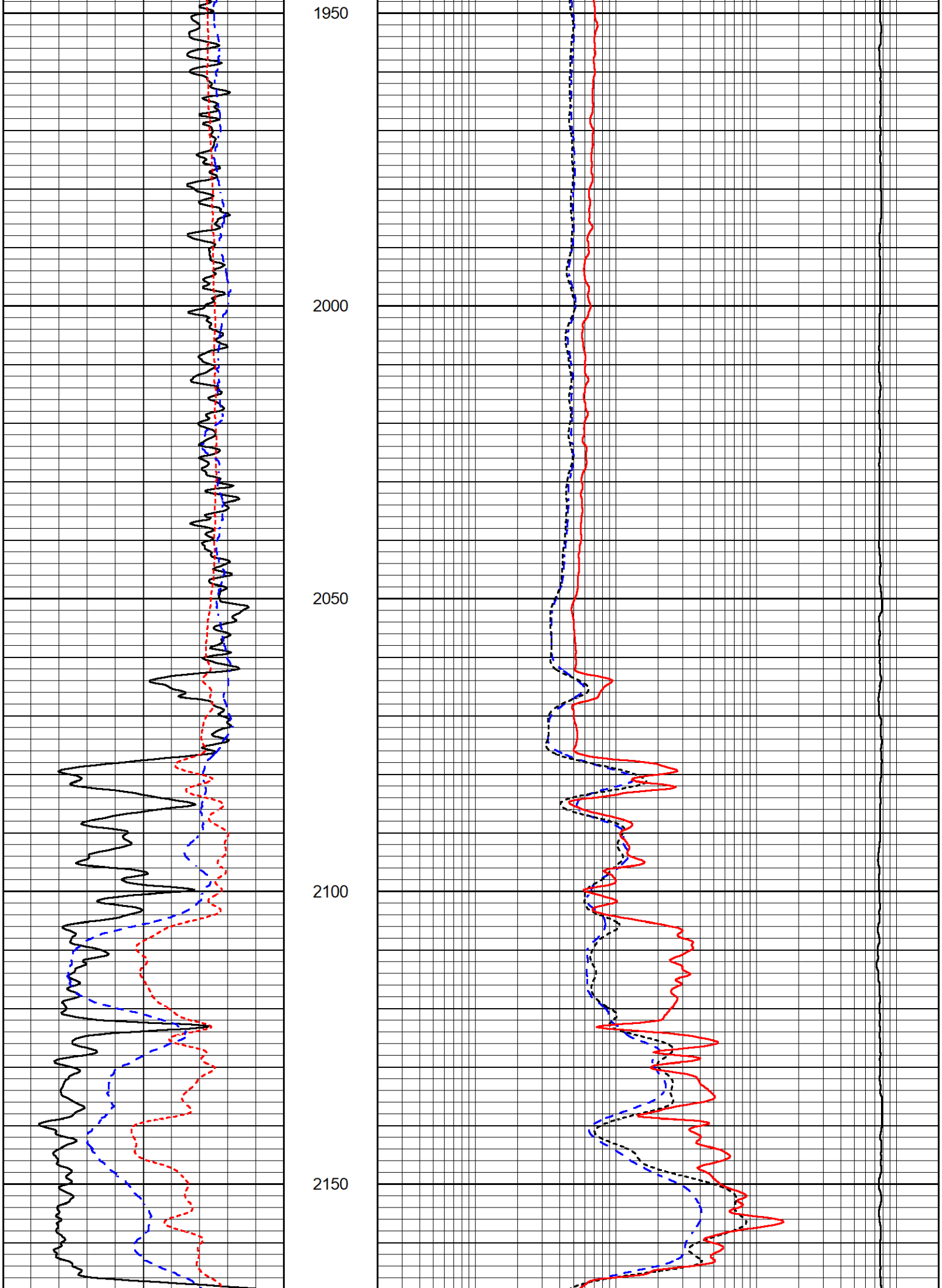
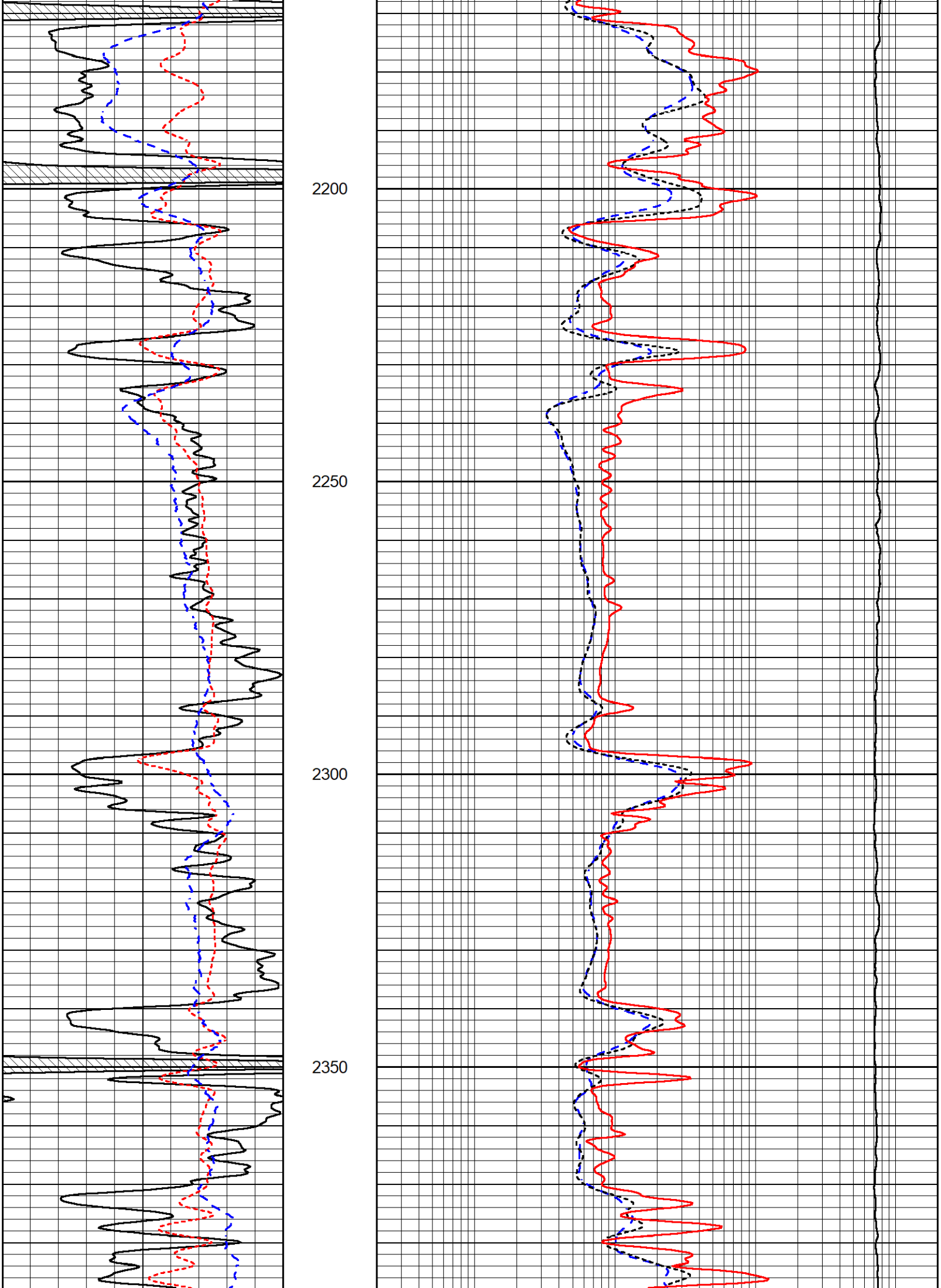
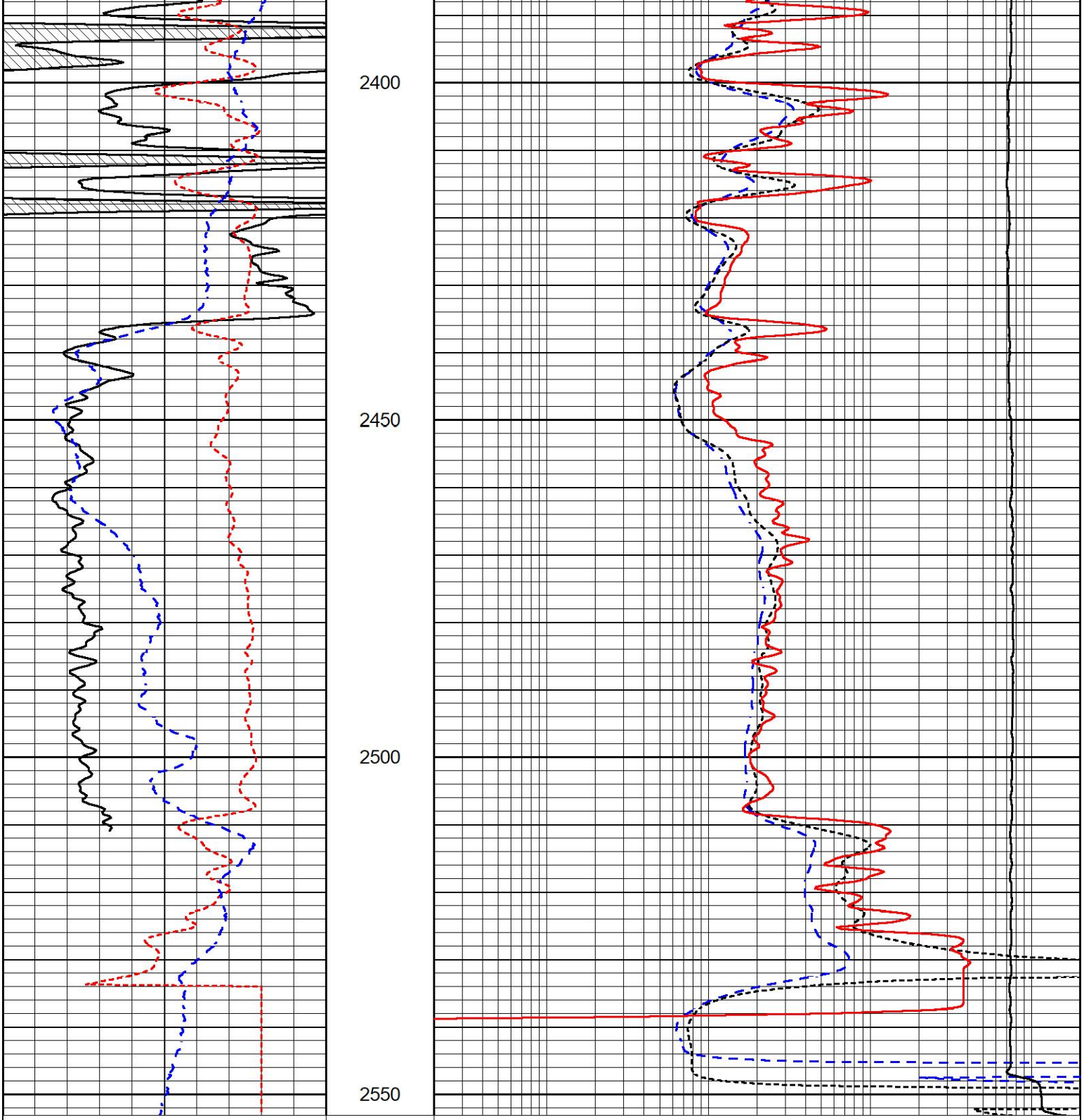
1800
1850
1900


1950
2000
2050
2100
2150


2200
2250
2300
2350



MIDWEST WIRELINE

REPEAT SECTION

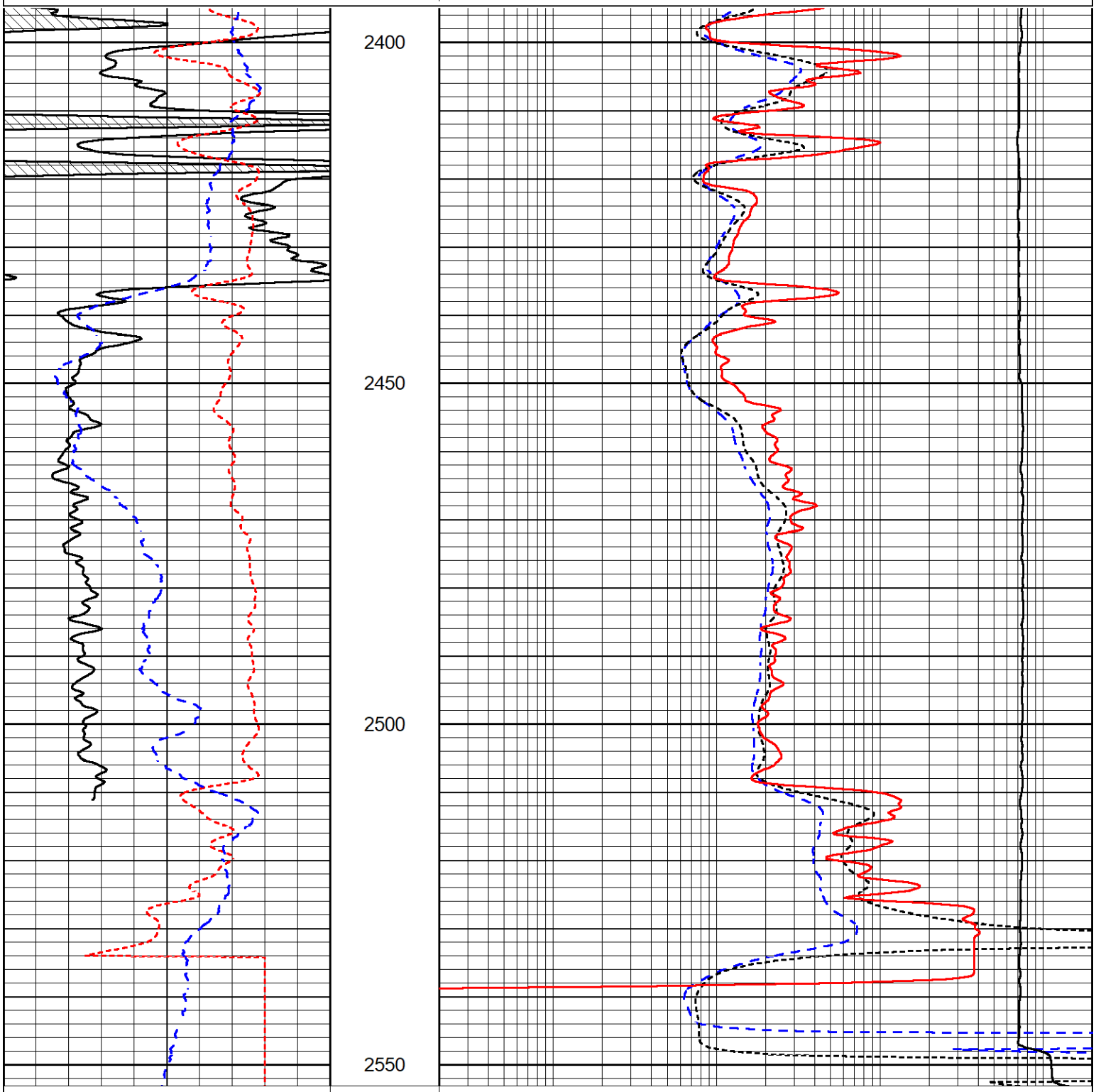
REPEAT PASS

Database File	eopc_eck a #1.db
Dataset Pathname	StkMI/pass2.1

Presentation Format	_dil
Dataset Creation	Wed Aug 03 12:18:06 2022
Charted by	Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
-160	RXORT	40
-200	SP (mV)	0

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0



0	Gamma Ray (GAPI)	150
-160	RXORT	40
-200	SP (mV)	0

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0

Calibration Report

Calibration Report

Database File	eopc_eck a #1.db
Dataset Pathname	StkMl/pass3.1
Dataset Creation	Wed Aug 03 12:46:21 2022

Dual Induction Calibration Report

Serial-Model:	507-M&W
Surface Cal Performed:	Tue Jul 19 06:59:10 2022

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		m	b
Deep	82.972	482.449	0.000	255.800	mmho/m	0.590	-35.130
Medium	120.285	668.174	0.000	255.800	mmho/m	0.517	-61.500

Microlog Calibration Report

Serial-Model:	402-PSIML
Performed:	Sun Jul 17 13:11:21 2022

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	10000.0000	0.0000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	12000.0000	-0.3000
Caliper	1.0052	1.0858	5.0000	16.5000	in	65.0000	-59.8000

Compensated Density Calibration Report

Serial-Model:	302-02-M&W
Source #:	20762B
Master Calibration Performed:	Wed Jun 22 01:19:51 2022

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4422.04	6163.44	cps
Aluminum	2.665	g/cc	835.14	3912.91	cps

Spine Angle = 74.75 Density/Spine Ratio = 0.527

	Size		Reading
Small Ring	8.00	in	0.53
Large Ring	30.00	in	0.60

Compensated Neutron Calibration Report

Serial Number:	207-MW
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:	Fri Dec 3 15:10:46 2021	
Calibrator Value:	500.0	GAPI
Background Reading:	24.0	cps
Calibrator Reading:	637.0	cps
Sensitivity:	0.5500	GAPI/cps

MIDWEST WIRELINE

Company	EPOC LLC
Well	Eck 'A' #1
Field	Hazlett
County	Butler
State	Kansas