MIDWEST WIRELINE

DUAL INDUCTION LOG

Company EPOC LLC
Well Eck 'A' #3
Field Hazlett
County Butler
State Kansas

Company EPOC LLC
Well Eck 'A' #3
Field Hazlett
County Butler State Kansas

Location: API # : 15-015-24165-00-00
SW SE NW NW
1220 FNL & 925 FWL
SEC 32 TWP 23S RGE 5E

Other Services
CNL/CDL
MEL

Permanent Datum Ground Level Elevation 1478
Log Measured From Kelly Bushing
Drilling Measured From Kelly Bushing

Elevation
K.B. 1484
D.F.
G.L. 1478

Date	9/19/2022					
Run Number	One					
Depth Driller	2600					
Depth Logger	2594					
Bottom Logged Interval	2593					
Top Log Interval	200					
Casing Driller	8.625 @ 212					
Casing Logger	211					
Bit Size	7.875					
Type Fluid in Hole	Chemical					
Salinity,ppm CL						
Density / Viscosity	9.5	39				
pH / Fluid Loss						
Source of Sample	Flowline					
Rm @ Meas. Temp	0.95 @ 76					
Rmf @ Meas. Temp	0.71 @ 76					
Rmc @ Meas. Temp	1.28 @ 76					
Source of Rmf / Rmc	Charts					
Rm @ BHT	0.71 @ 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					

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Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

Newton, KS, E on 1st Ave to Purity
Springs Rd, 2 S, 1/4 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:
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 (307-11)	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 (501 HT)	18.25	3.50	220.00
CILD	8.33					
CILM	4.50					
SP	0.20					

Dataset:	epoc_eck a #3.db: field/well1/StkMl/pass3.1
Total length:	42.33 ft
Total weight:	685.00 lb
O.D.:	4.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\epoc_eck a #3.db
Dataset field/well1/StkMl/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	-80	80	Off	2594

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

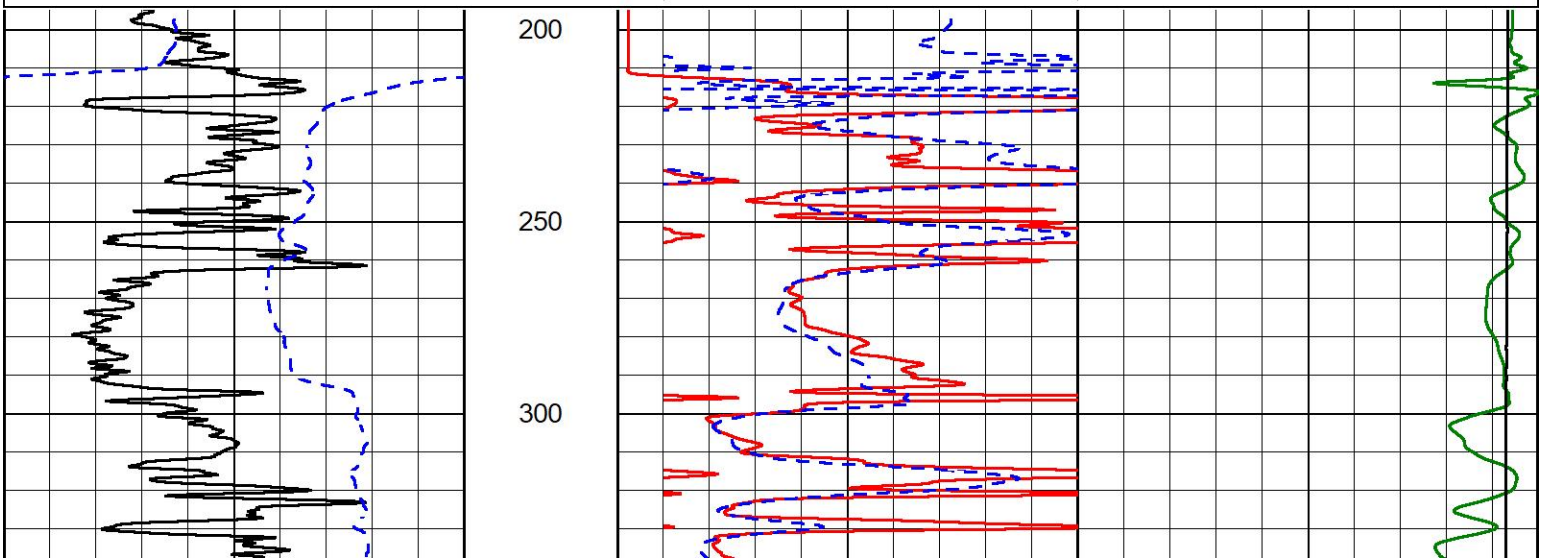
MIDWEST WIRELINE

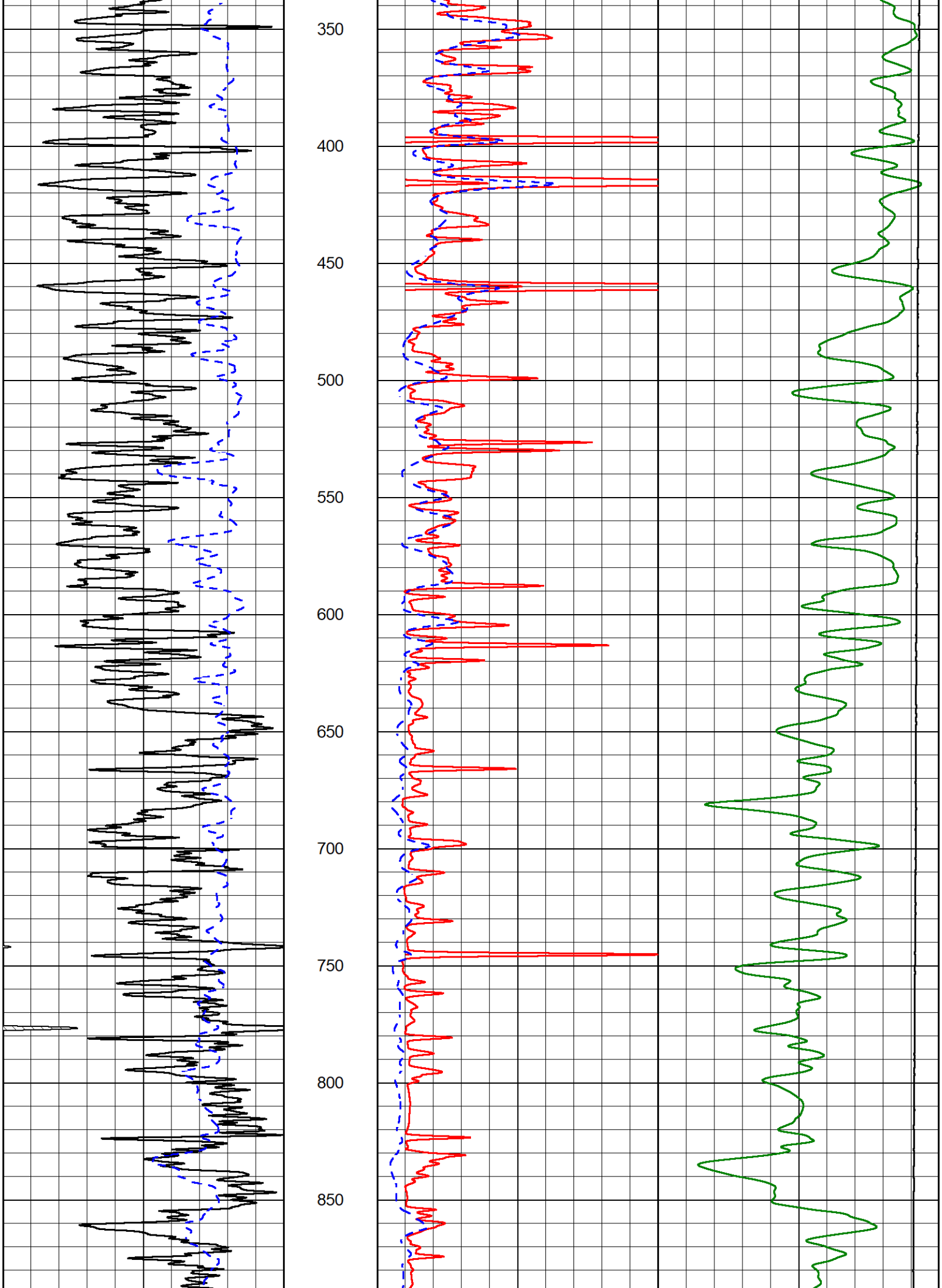
2" SCALE RESISTIVITY

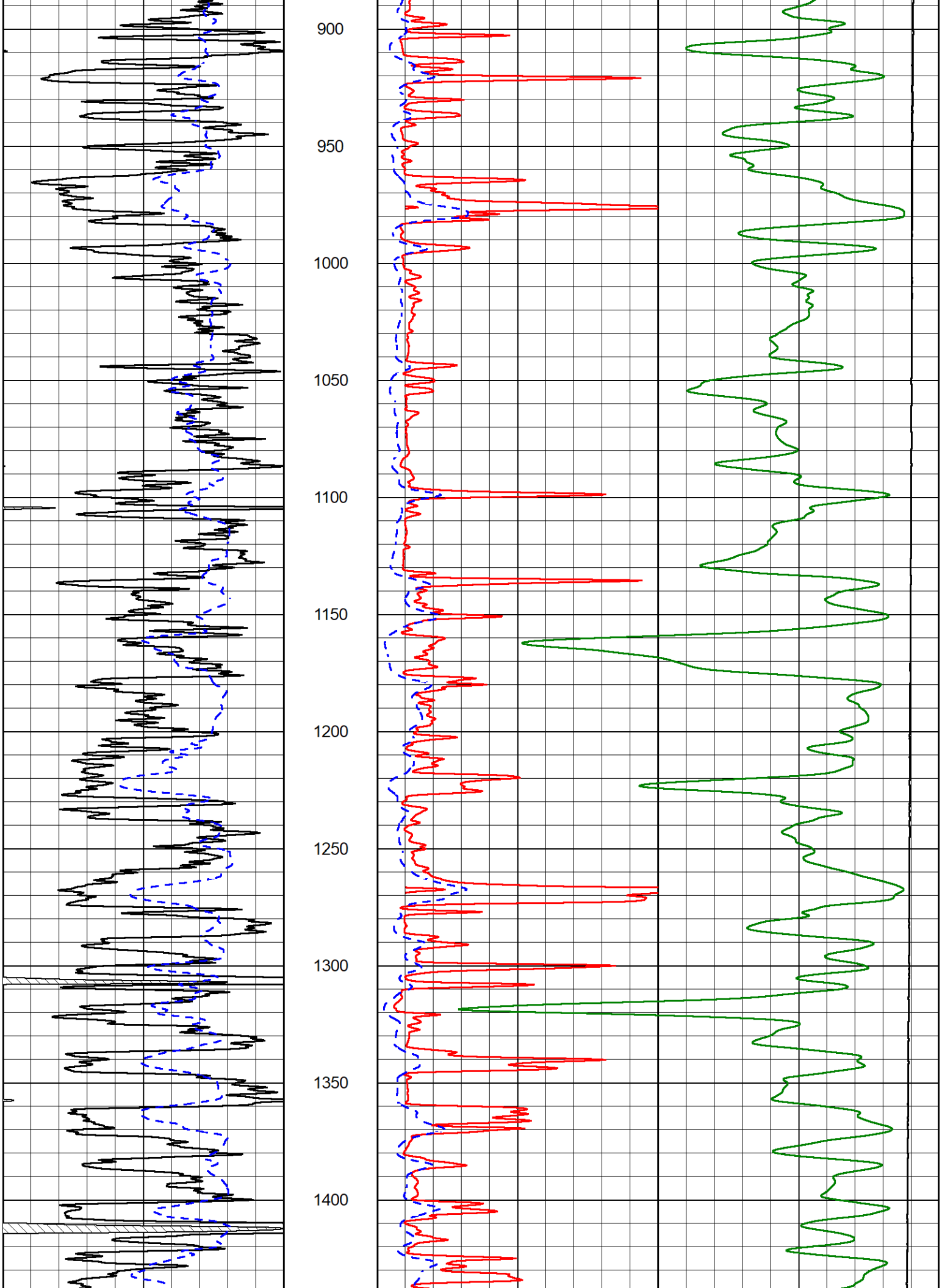
MAIN PASS

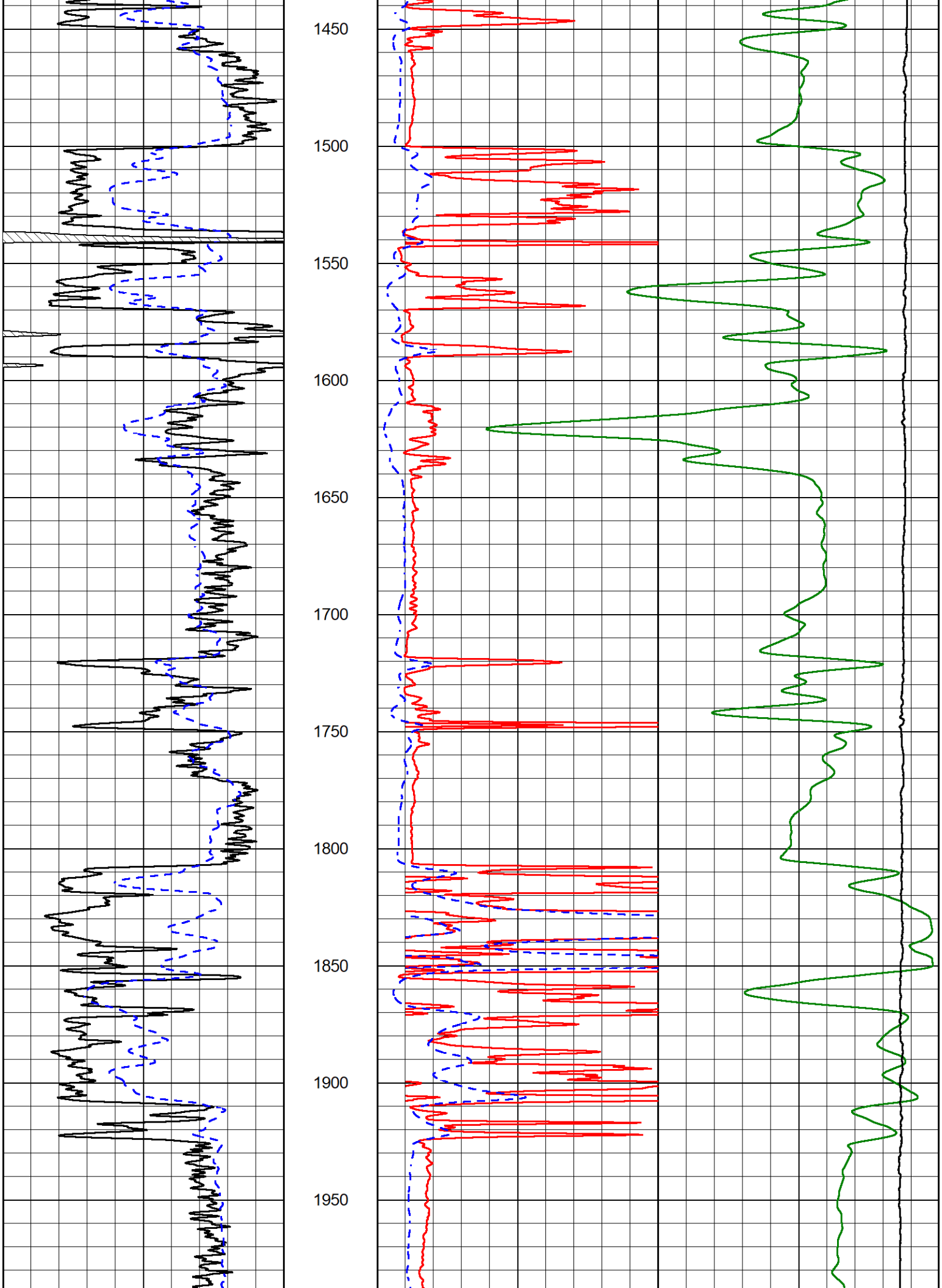
Database File	epoc_eck a #3.db
Dataset Pathname	well1/StkMl/pass3.2
Presentation Format	_dil2in
Dataset Creation	Mon Sep 19 02:27:20 2022
Charted by	Depth in Feet scaled 1:600

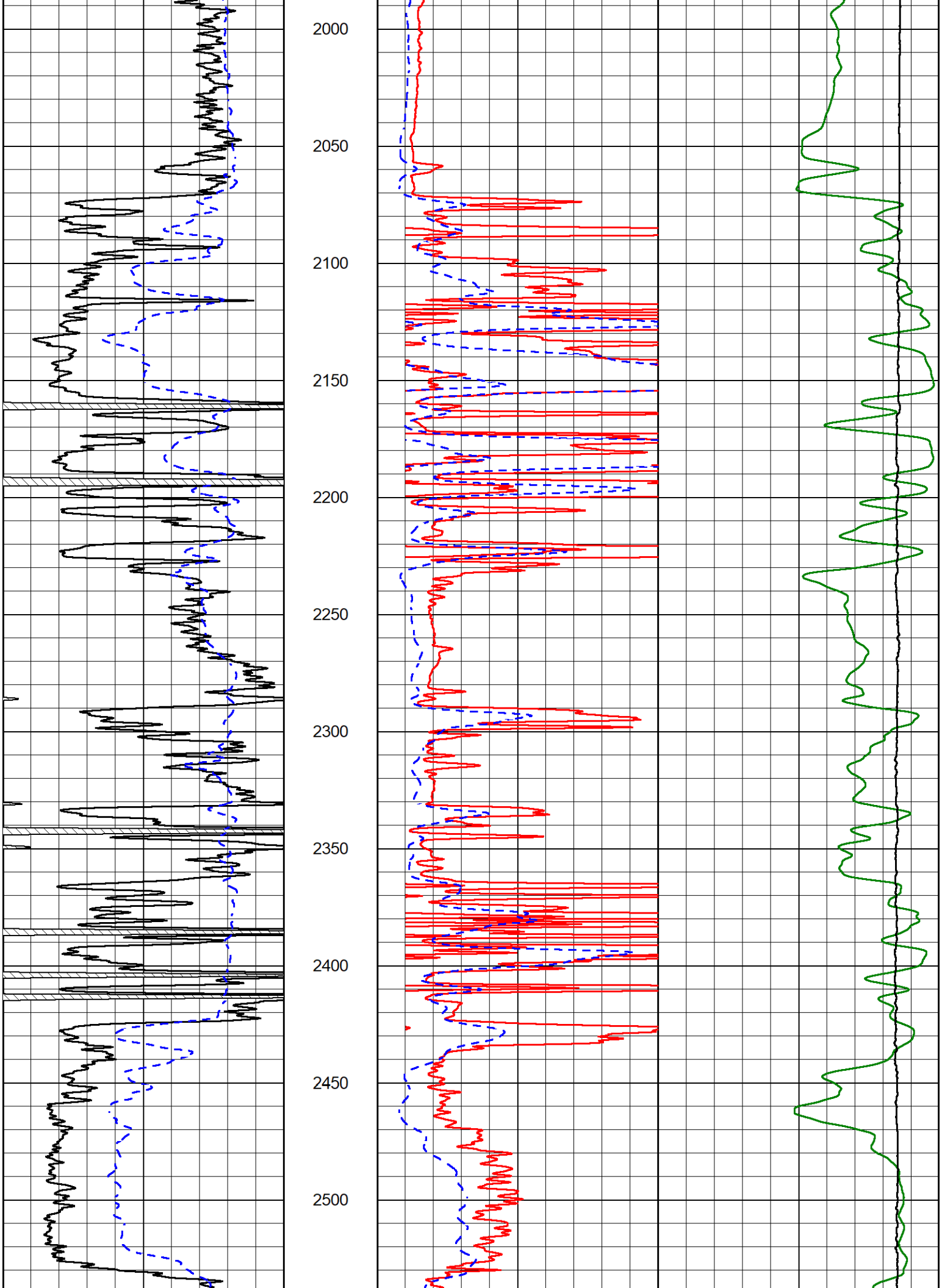
0	Gamma Ray (GAPI)	150
-200	SP (mV)	0
1000	Conductivity (mmho/m)	0
15000	Line Tension (lb)	0
0	Shallow Resisitivity (Ohm-m)	50
0	Deep Resistivity (Ohm-m)	50
50	Shallow Resistivity (Ohm-m)	200
50	Deep Resistivity (Ohm-m)	200

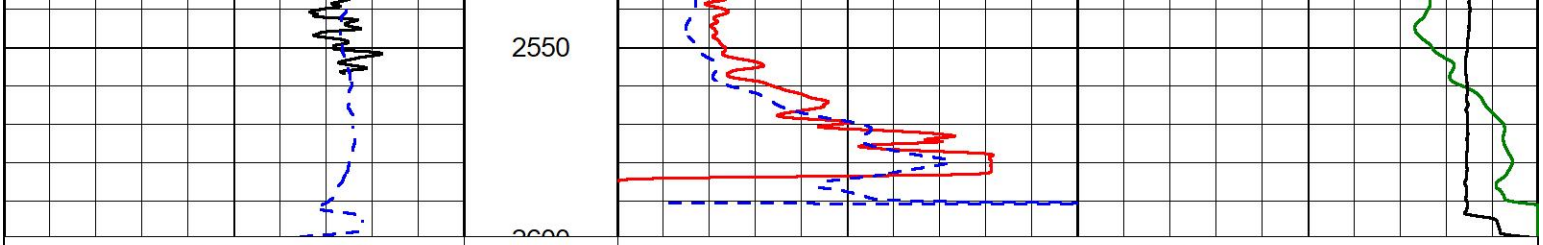



350
400
450
500
550
600
650
700
750
800
850


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

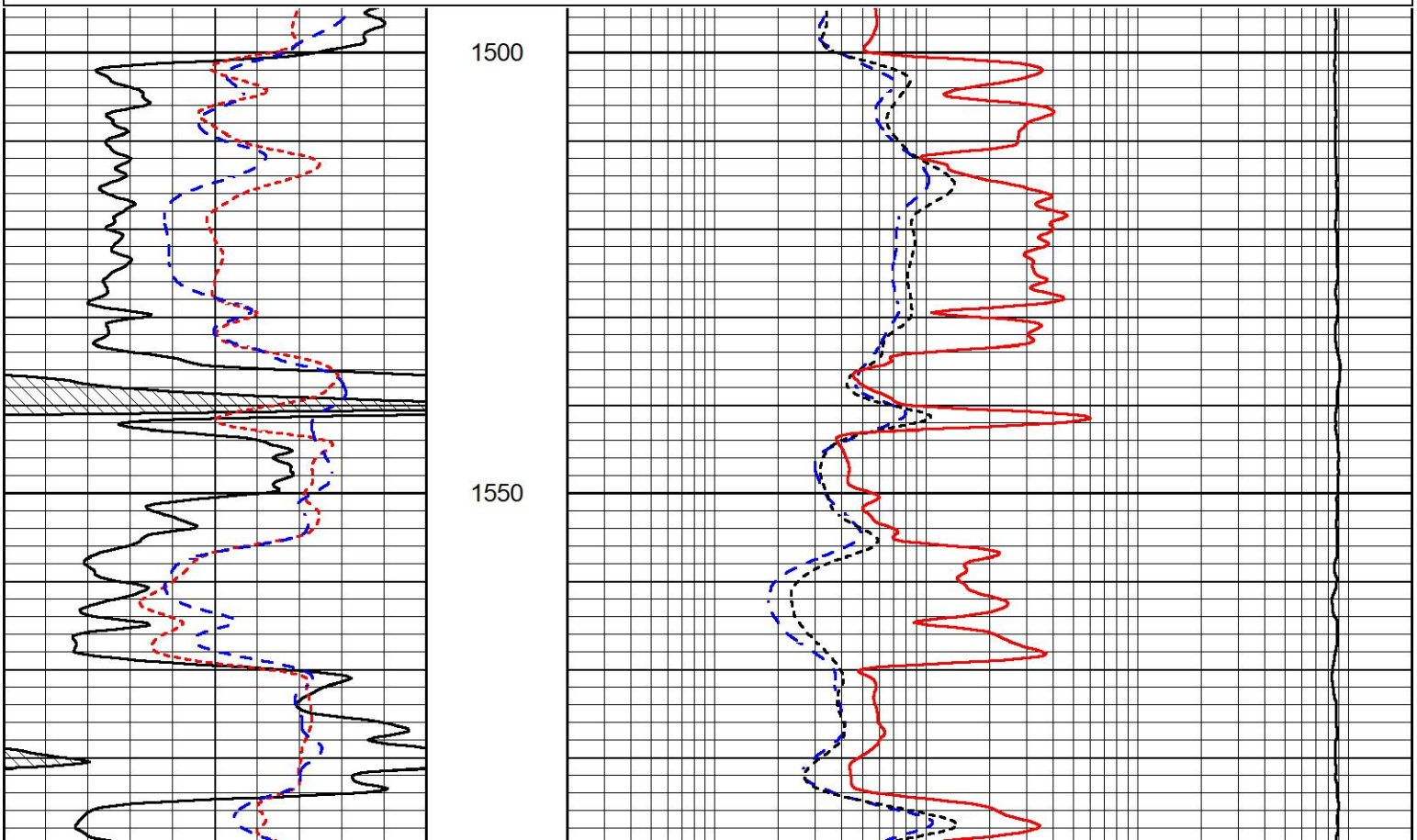


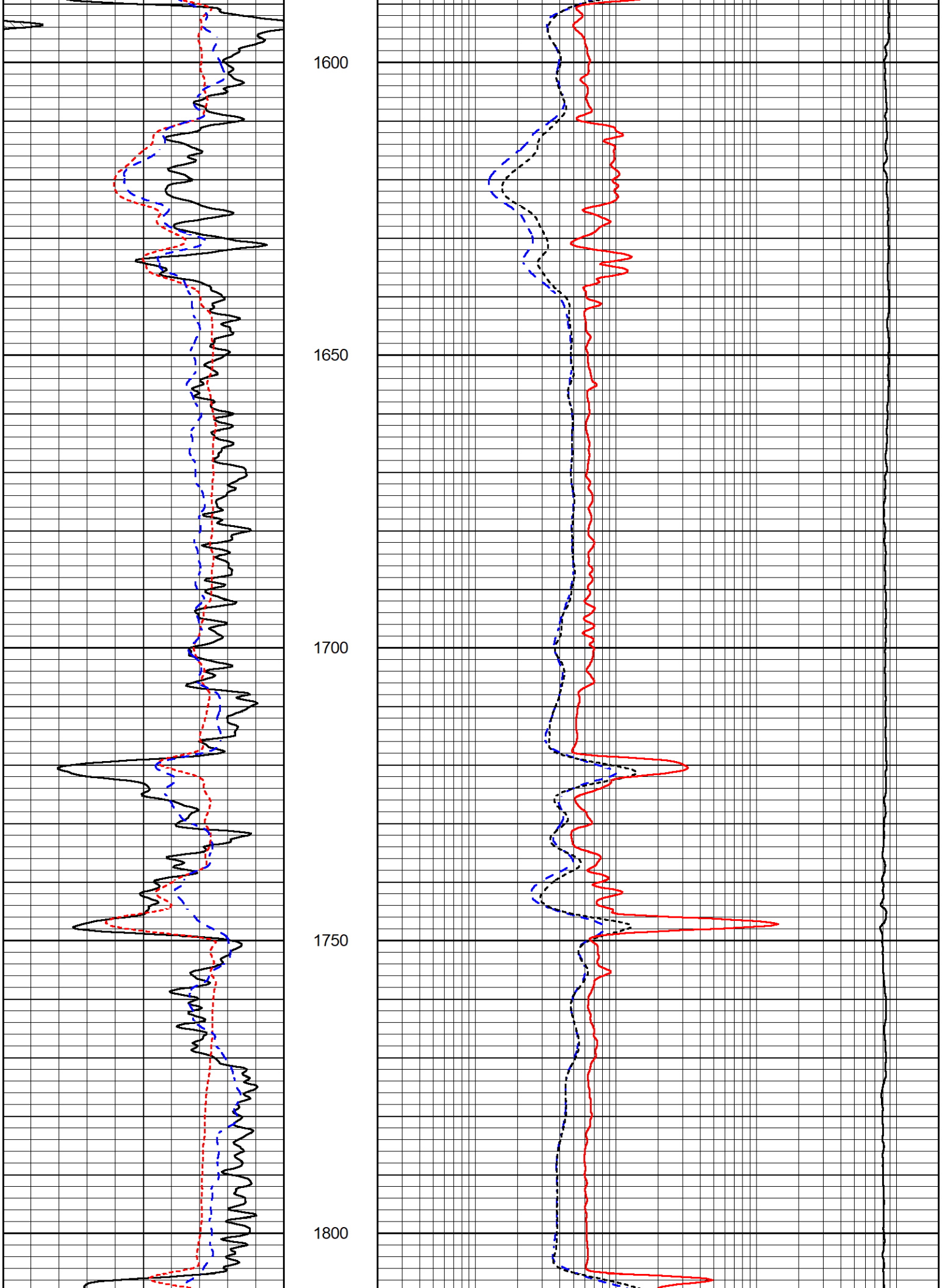
DETAIL SECTION

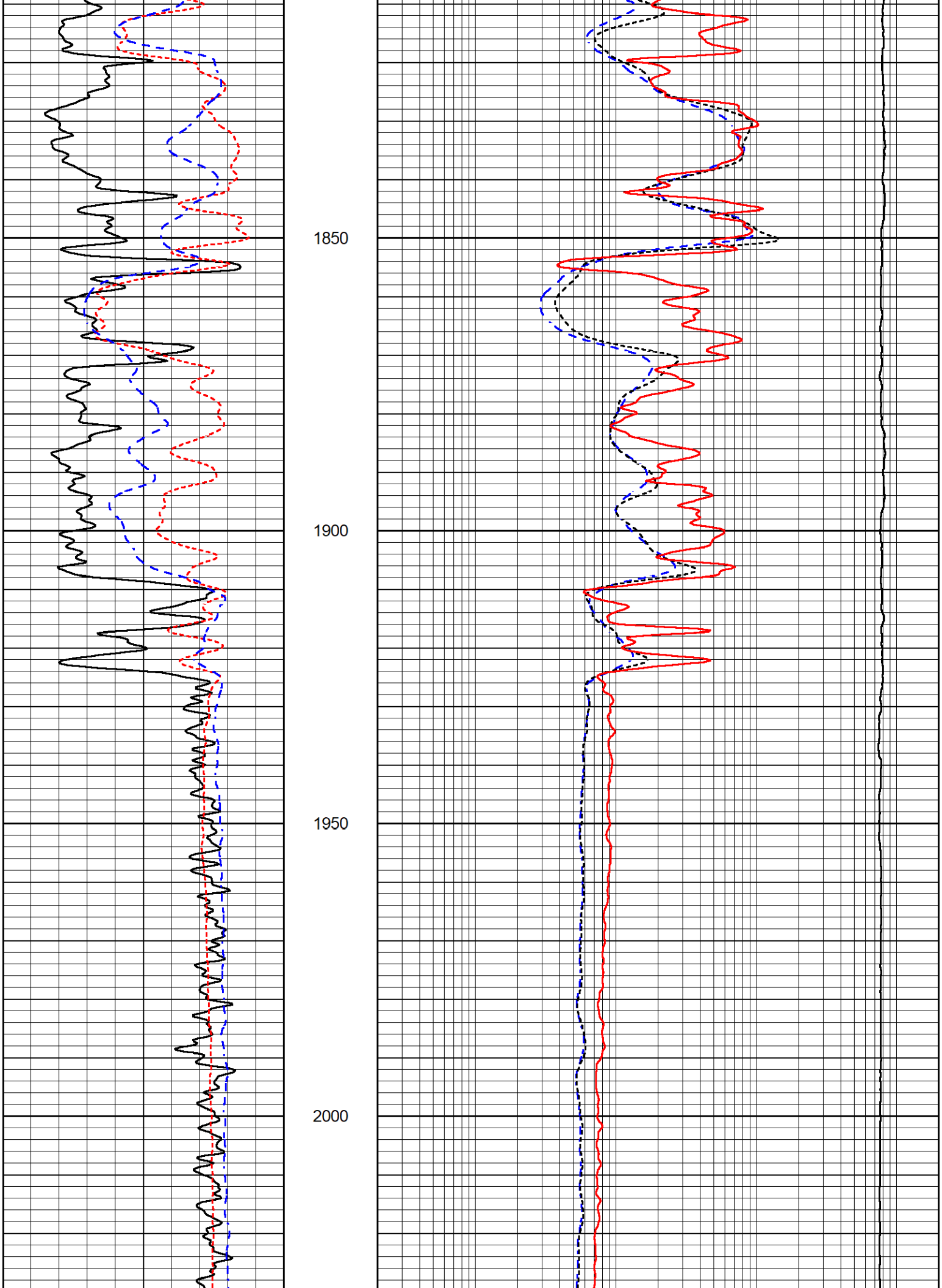
MAIN PASS

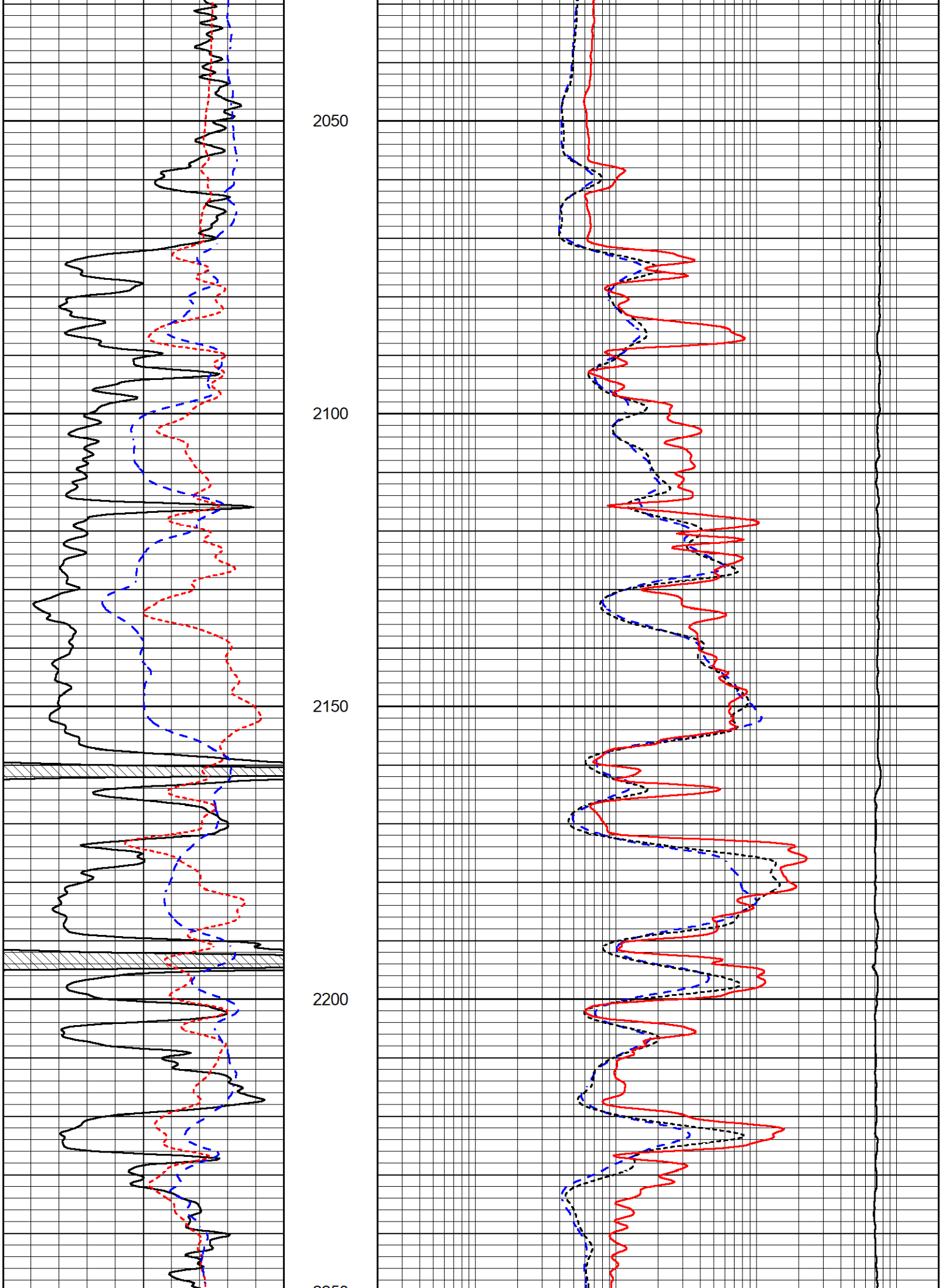
MIDWEST WIRELINE

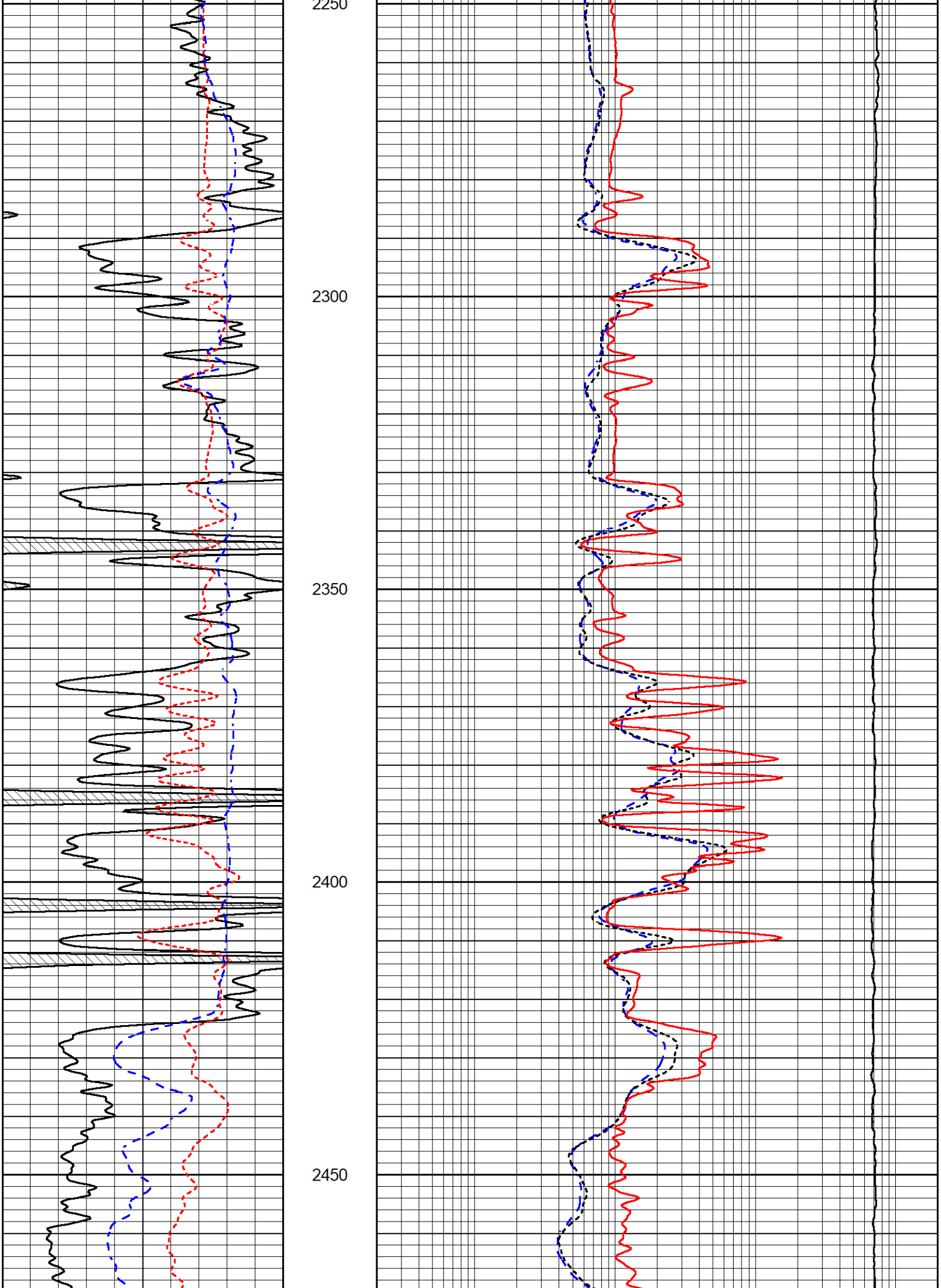
Database File	epoc_eck a #3.db
Dataset Pathname	well1/StkMl/pass3.1
Presentation Format	_dil
Dataset Creation	Mon Sep 19 02:27:36 2022
Charted by	Depth in Feet scaled 1:240

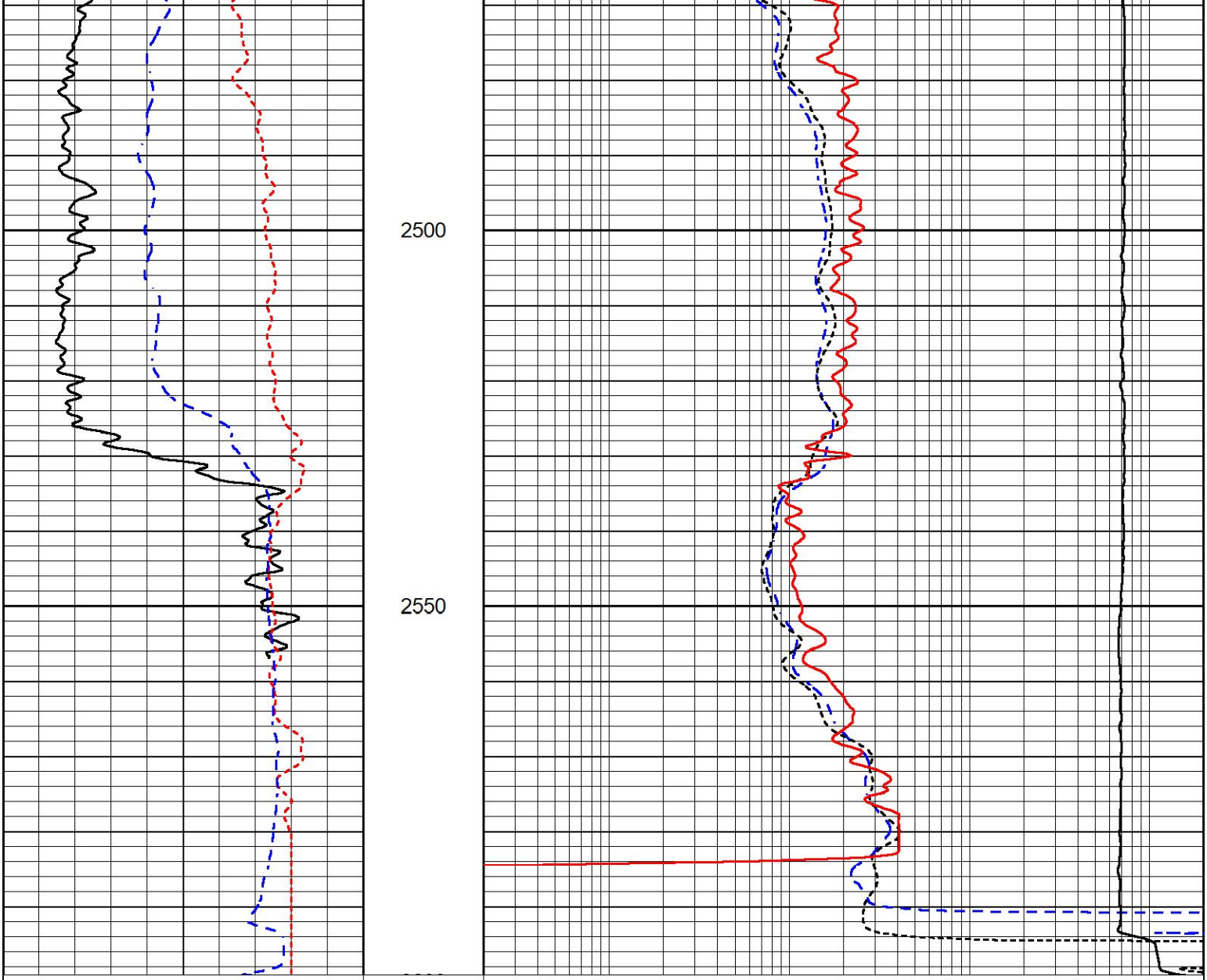



1600
1650
1700
1750
1800


1850
1900
1950
2000


2050
2100
2150
2200


2250
2300
2350
2400
2450



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

MIDWEST WIRELINE

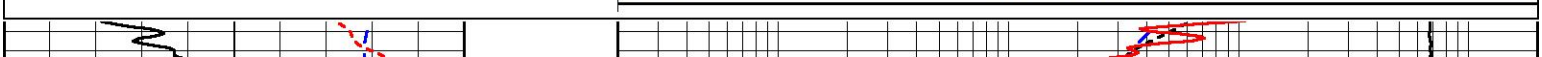
REPEAT SECTION

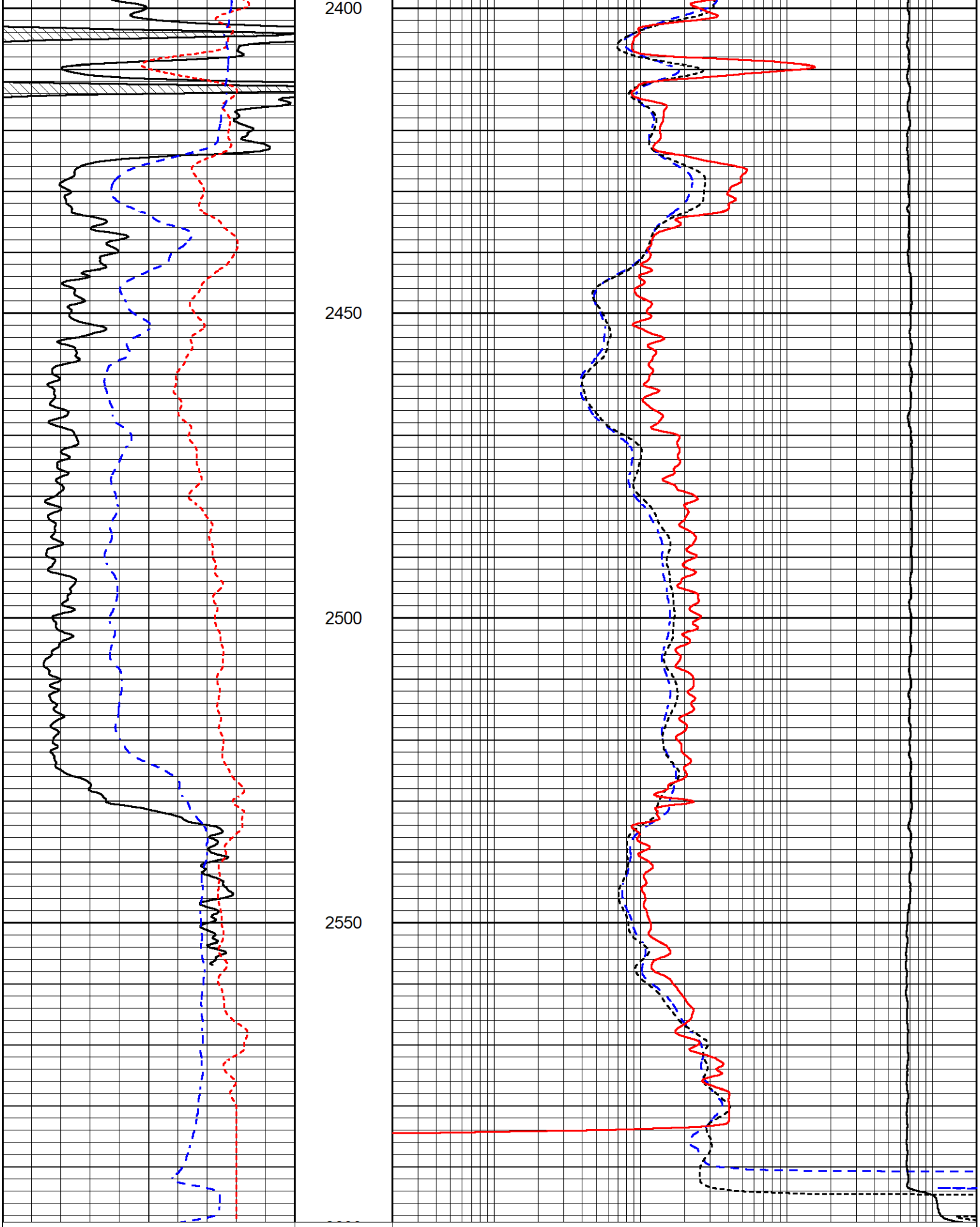
REPEAT PASS

Database File	epoc_eck a #3.db
Dataset Pathname	well1/StkMl/pass2.1
Presentation Format	_dil
Dataset Creation	Mon Sep 19 02:03:45 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




2400
2450
2500
2550
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

Database File	epoc_eck a #3.db
Dataset Pathname	well1/StkMl/pass3.1
Dataset Creation	Mon Sep 19 02:27:36 2022

Dual Induction Calibration Report

Serial-Model:	501 HT-M&W
Surface Cal Performed:	Sun Sep 11 11:20:04 2022

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		m	b
Deep	83.639	487.104	0.000	183.000	mmho/m	0.455	-39.000
Medium	113.335	1585.690	0.000	442.000	mmho/m	0.305	-35.000

Microlog Calibration Report

Serial-Model:	402-PSIML
Performed:	Fri Sep 9 11:18:26 2022

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	10000.0000	-1.0000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	10000.0000	-0.7000
Caliper	1.0052	1.0858	5.0000	16.5000	in	120.0000	-115.8500

Compensated Density Calibration Report

Serial-Model:	307-11-M&W
Source #:	20762B
Master Calibration Performed:	Sat Aug 27 10:20:16 2022

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	3600.52	4768.22	cps
Aluminum	2.670	g/cc	693.98	3106.20	cps

Spine Angle = 75.41

Density/Spine Ratio = 0.538

	Size		Reading
Small Ring	6.00	in	1.16
Large Ring	18.00	in	1.01

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' #3
Field	Hazlett
County	Butler
State	Kansas