MIDWEST WIRELINE

DUAL INDUCTION LOG

Company Cobalt Energy, LLC
Well Fortin #1-3
Field
County Decatur State Kansas
Location: API # : 15-039-21294-00-00
SW NW SE SE
877 FSL & 1139 FEL
SEC 3 TWP 3S RGE 28W

Other Services: CNL/CDL, MEL/BHCS

Elevation: K.B. 2641, D.F., G.L. 2636

Permanent Datum: Ground Level — Elevation 2636
Log Measured From: Kelly Bushing
Drilling Measured From: Kelly Bushing

Company Cobalt Energy, LLC
Well Fortin #1-3
Field
County Decatur
State Kansas

Date	6/13/2023		
Run Number	One		
Depth Driller	3944		
Depth Logger	3944		
Bottom Logged Interval	3943		
Top Log Interval	200		
Casing Driller	8.625 @ 236		
Casing Logger	231		
Bit Size	7.875		
Type Fluid in Hole	Chemical		
Salinity,ppm CL	2000		
Density / Viscosity	9.5 / 53		
pH / Fluid Loss	10.0 / 8.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.80 @ 70		
Rmf @ Meas. Temp	0.60 @ 70		
Rmc @ Meas. Temp	1.08 @ 70		
Source of Rmf / Rmc	CHARTS		
Rm @ BHT	0.49 @ 115		
Operating Rig Time	5 Hours		
Max Rec. Temp. F	115		
Equipment Number	P-108		
Location	HAYS		
Recorded By	D. Schmidt		
Witnessed By	Larry Nicholson		

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

Hoxie,
5 East to CR 491,
1 South, 1 1/4 West,
North and West into

Log Measured From: Kelly Bushing 5 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: D. Schmidt	Primary Witness: Larry Nicholson
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	32.75		GR-M&W (103)	3.00	3.50	50.00
CNLSC	29.65		CNT-M&W (210)	5.00	3.50	100.00
CNSSC	28.90					
			CDL-M&W (303-03)	8.50	4.00	250.00
LSD	20.60					
DCAL	20.58					
SSD	20.10					
RLL3F	15.50					
RLL3	15.50					
			DIL-M&W (505 HT)	18.25	3.50	220.00
CILD	8.33					
CILM	4.50					
SP	0.20					

Dataset: cobalt_fortin 1-3.db: field/well/stack/pass4.1
Total length: 34.75 ft
Total weight: 620.00 lb
O.D.: 4.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\cobalt_fortin 1-3.db
Dataset field/well/stack/pass4.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	119	5.5	0	1	2	2.71

NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	No	0	0	263	70	Off	3945

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

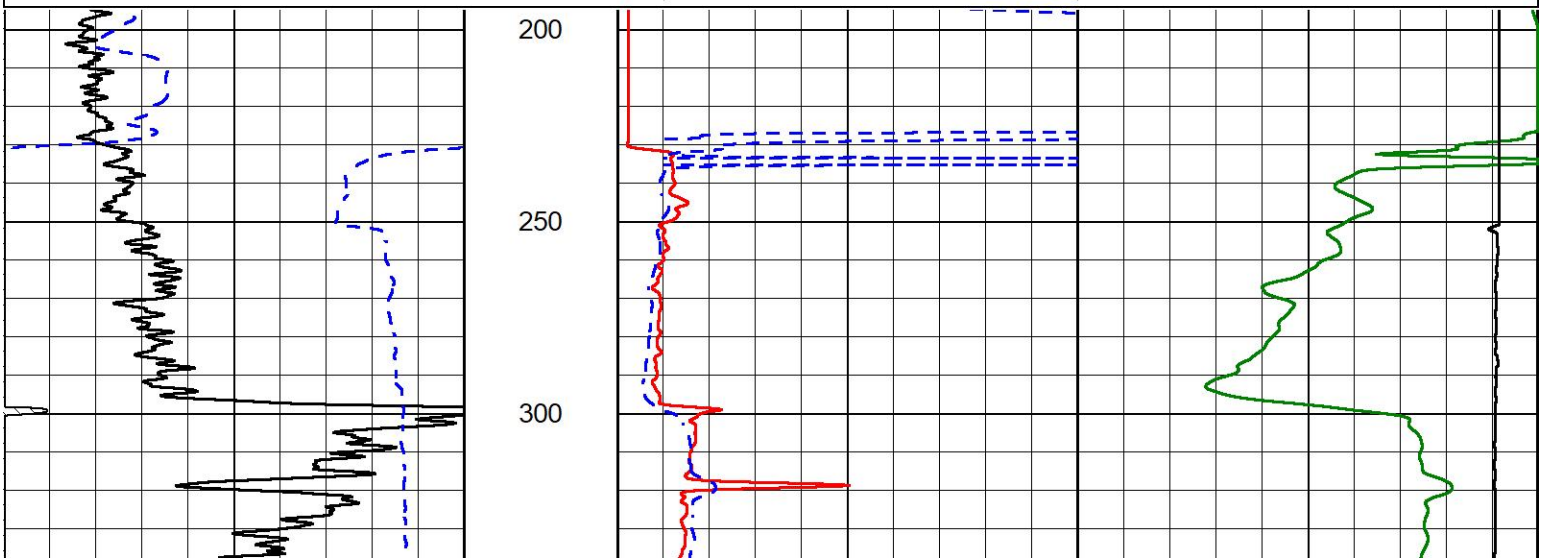
MIDWEST WIRELINE

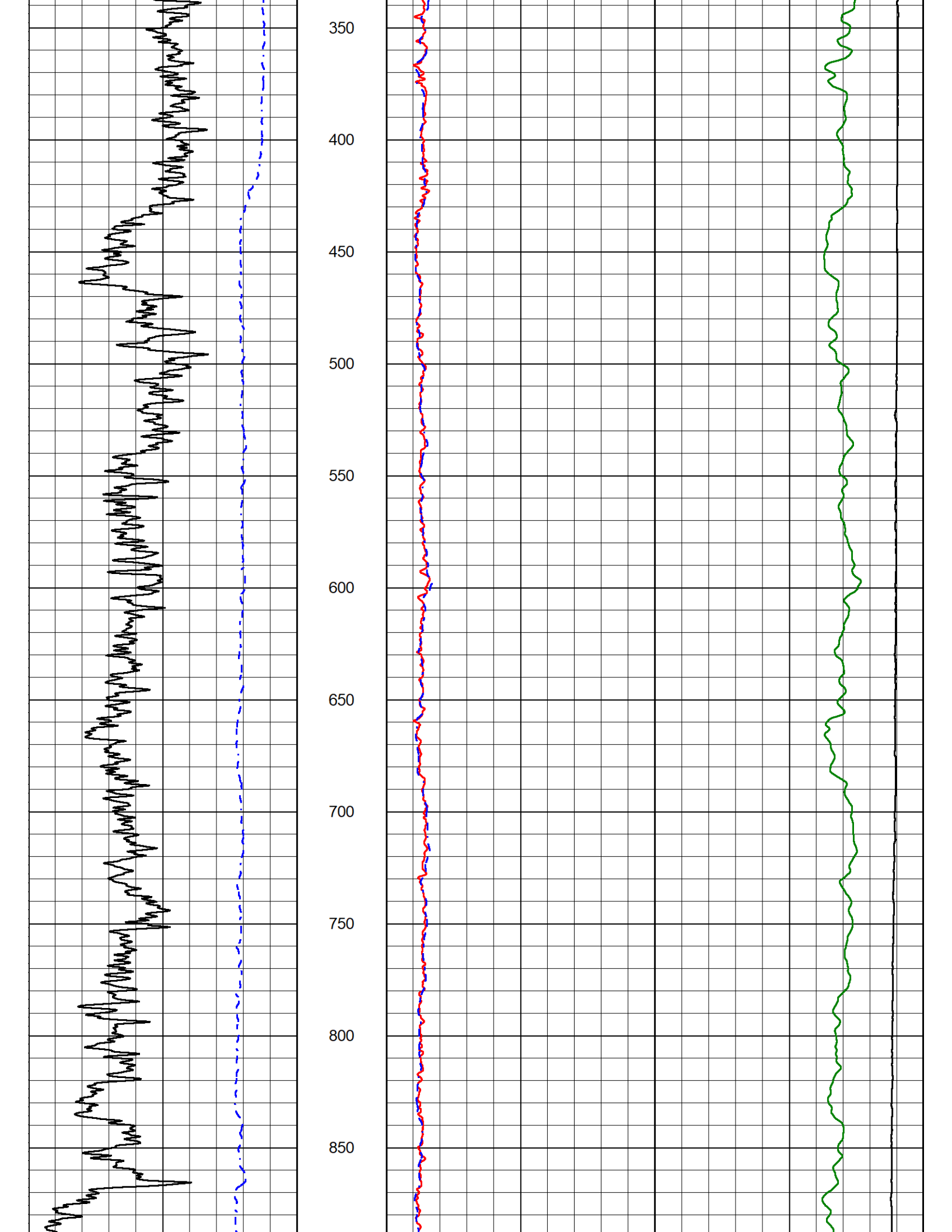
2" SCALE RESISTIVITY

MAIN PASS

Database File	cobalt_fortin 1-3.db
Dataset Pathname	stack/pass4.3
Presentation Format	_dil2in
Dataset Creation	Tue Jun 13 13:10:45 2023
Charted by	Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	300
-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
	Shallow Resistivity	
50	(Ohm-m)	200
50	Deep Resistivity (Ohm-m)	200

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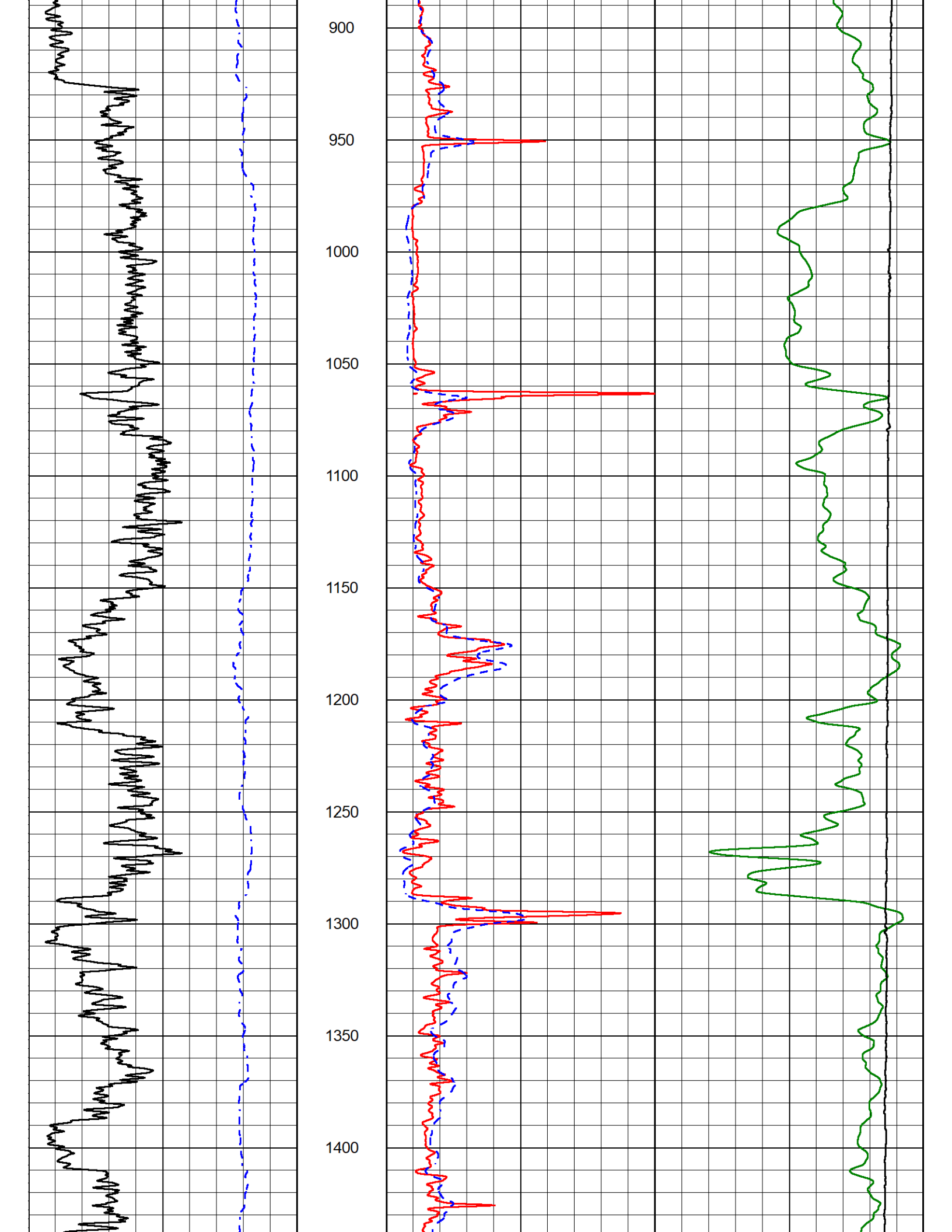
550
600
650
700
750
800
850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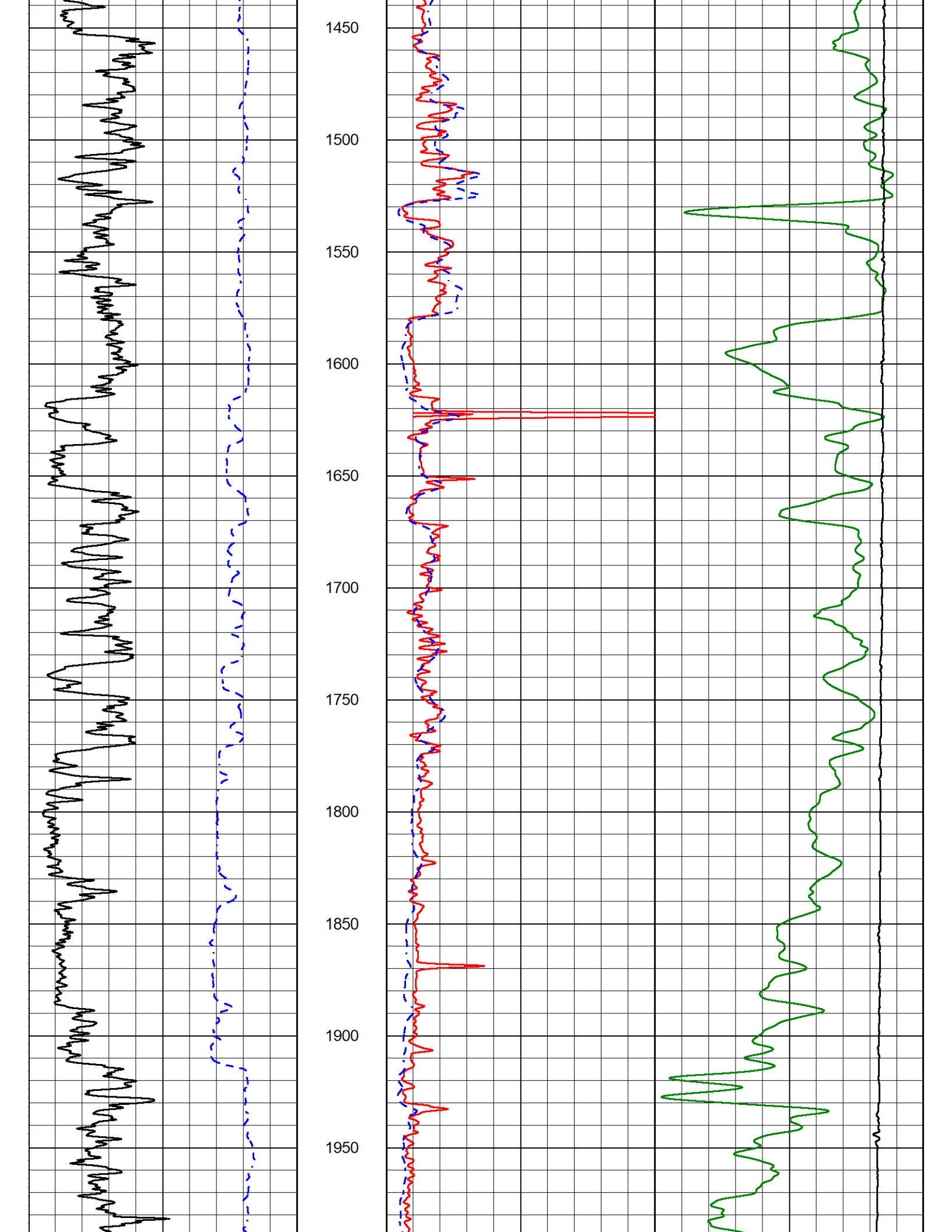
950
1000
1050
1100
1150
1200
1250
1300
1350
1400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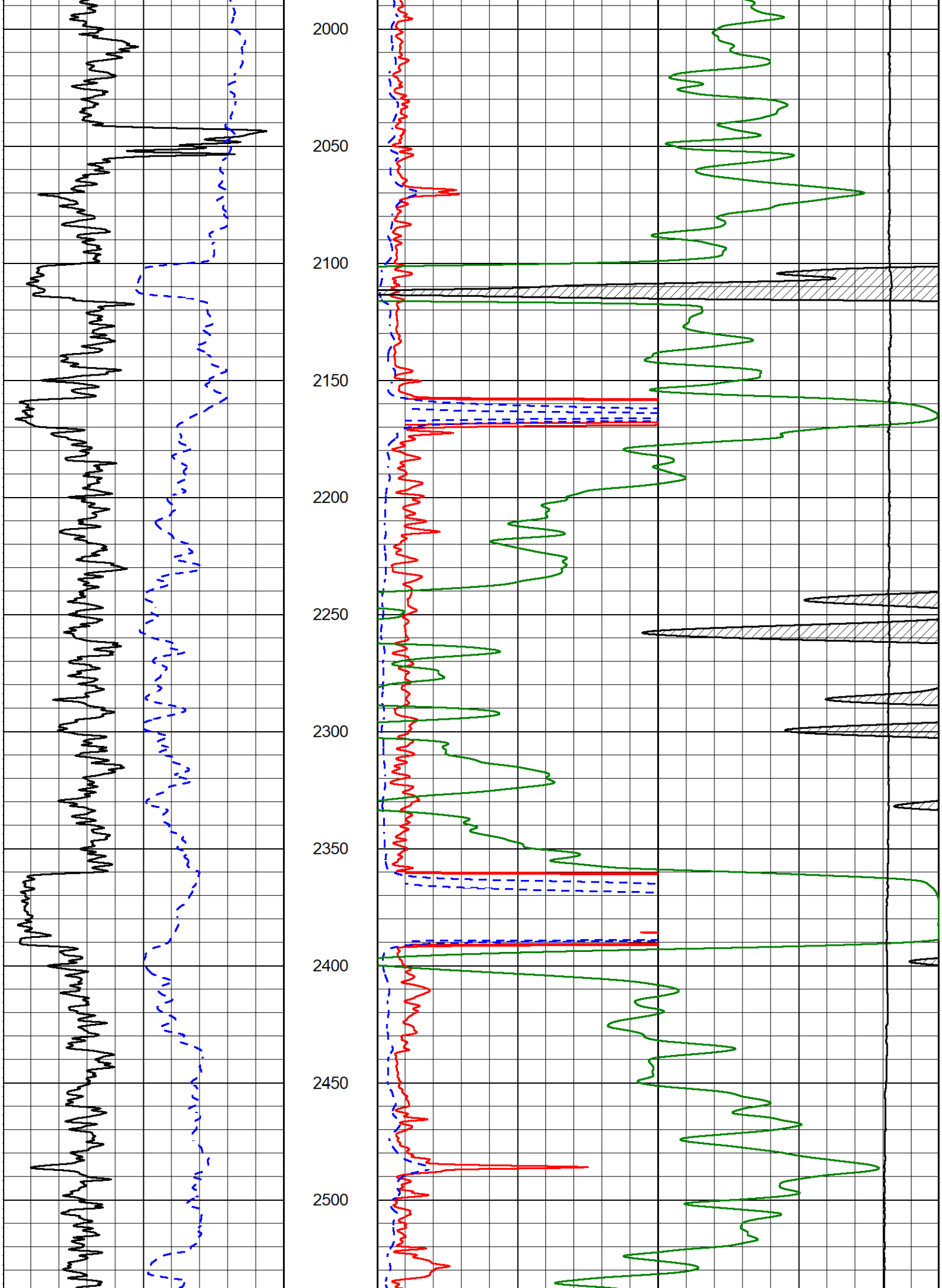
1550
1600
1650
1700
1750
1800
1850
1900
1950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2200
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2300
2350
2400
2450
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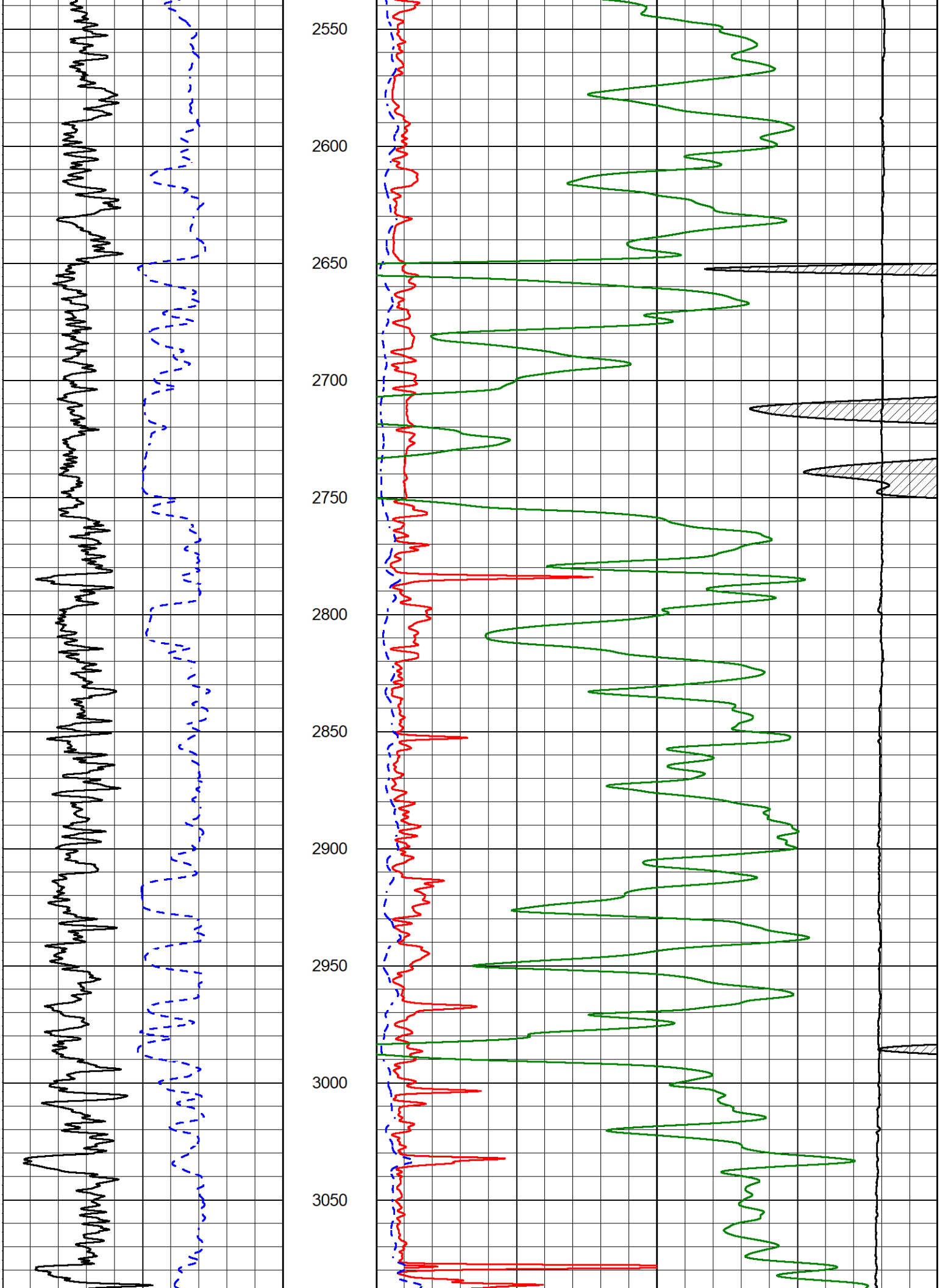
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2950
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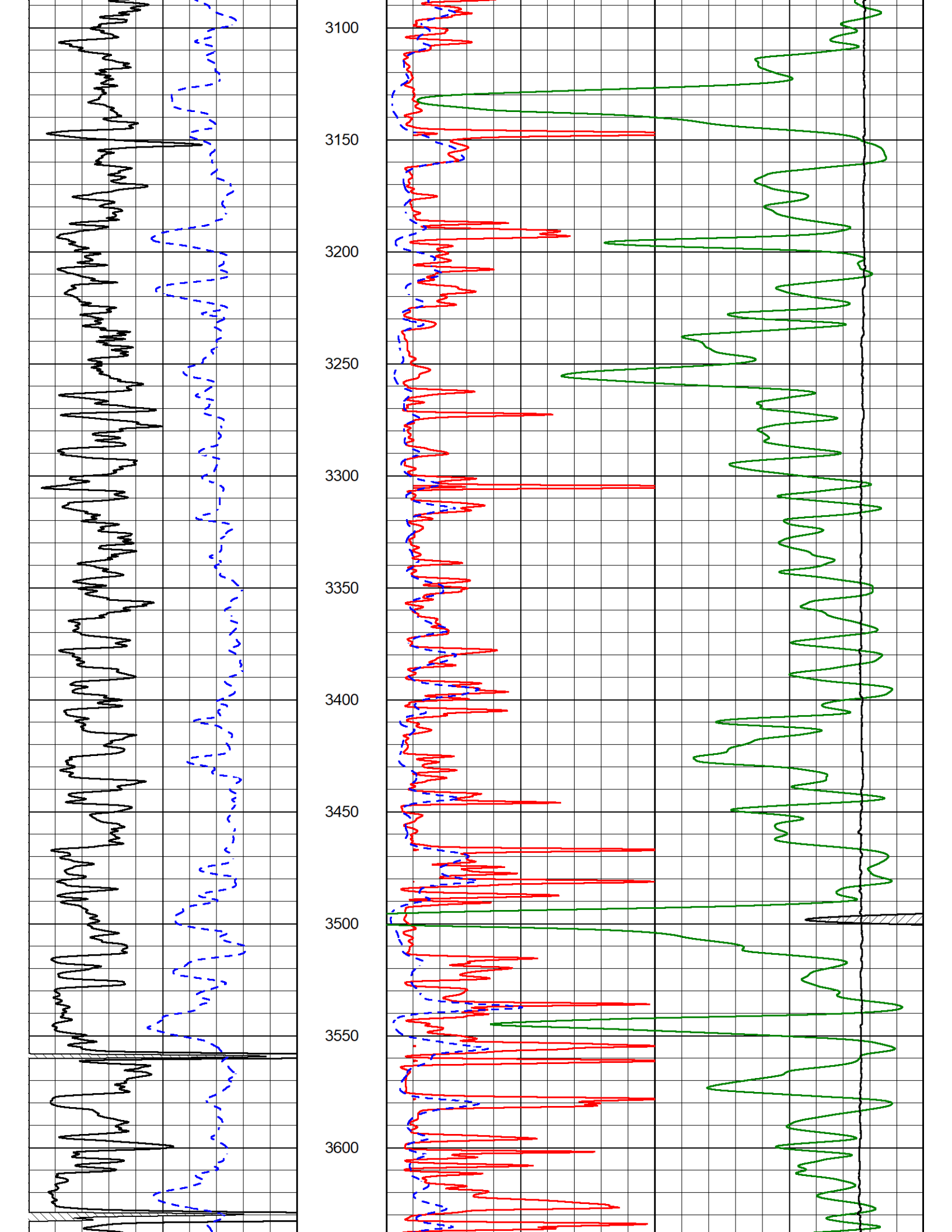
3050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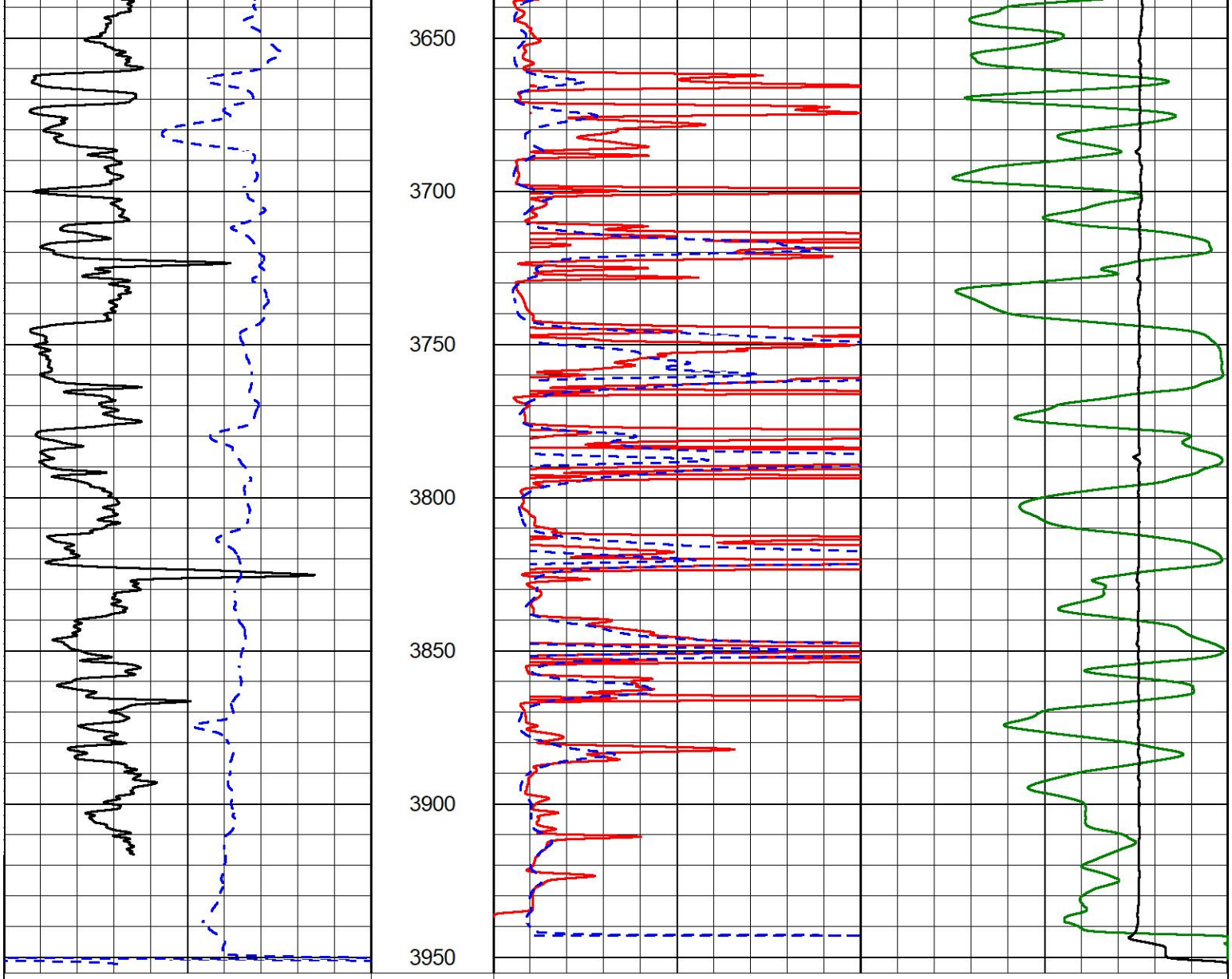
3450
3500
3550
3600



MIDWEST WIRELINE

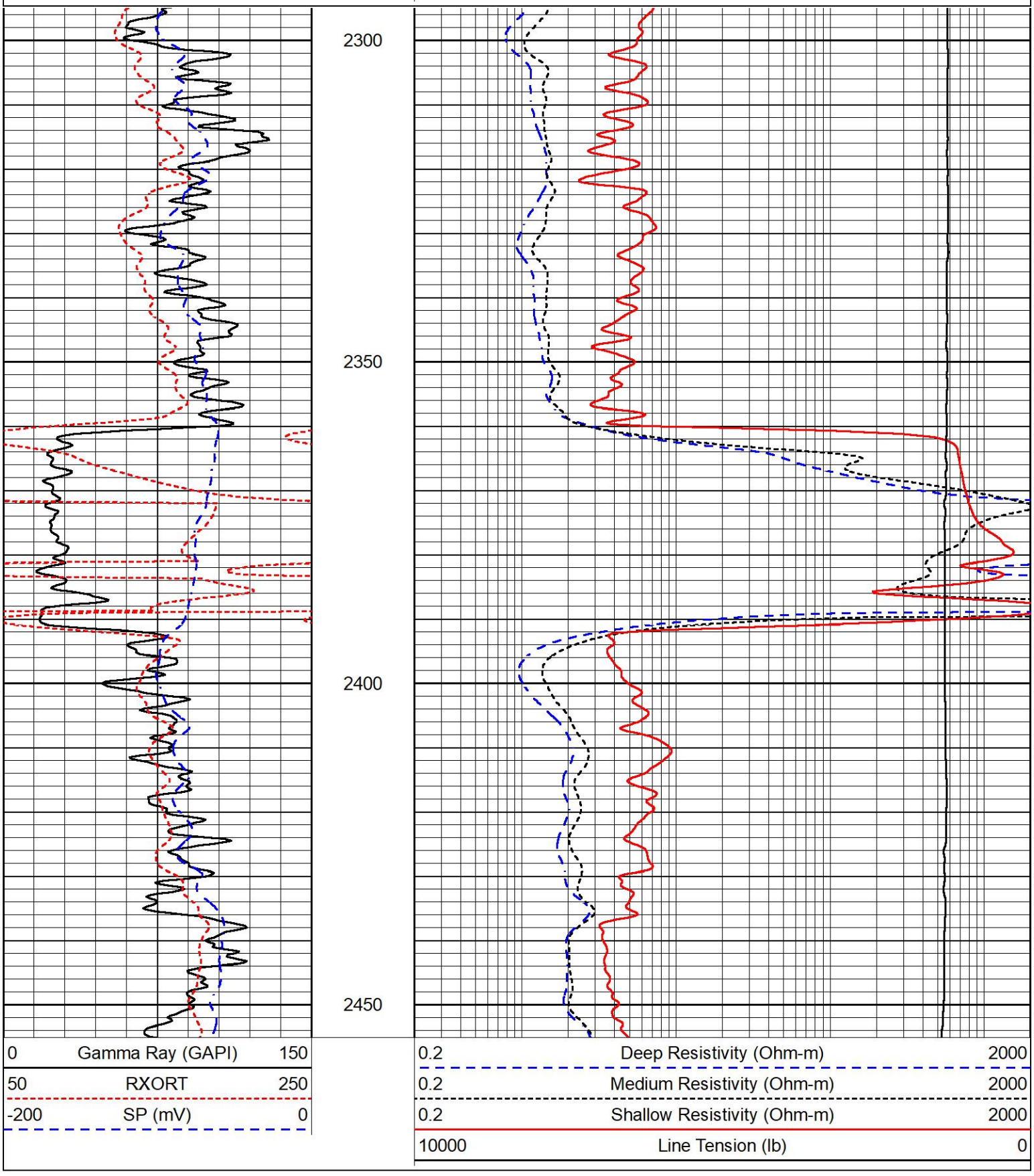
ANHYDRITE SECTION

MAIN PASS

Database File	cobalt_fortin 1-3.db
Dataset Pathname	stack/pass4.4
Presentation Format	_dil
Dataset Creation	Tue Jun 13 13:12:56 2023
Charted by	Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
50	RXORT	250
-200	SP (mV)	0

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	Shallow Resistivity (Ohm-m)	2000



MIDWEST WIRELINE

DETAIL SECTION

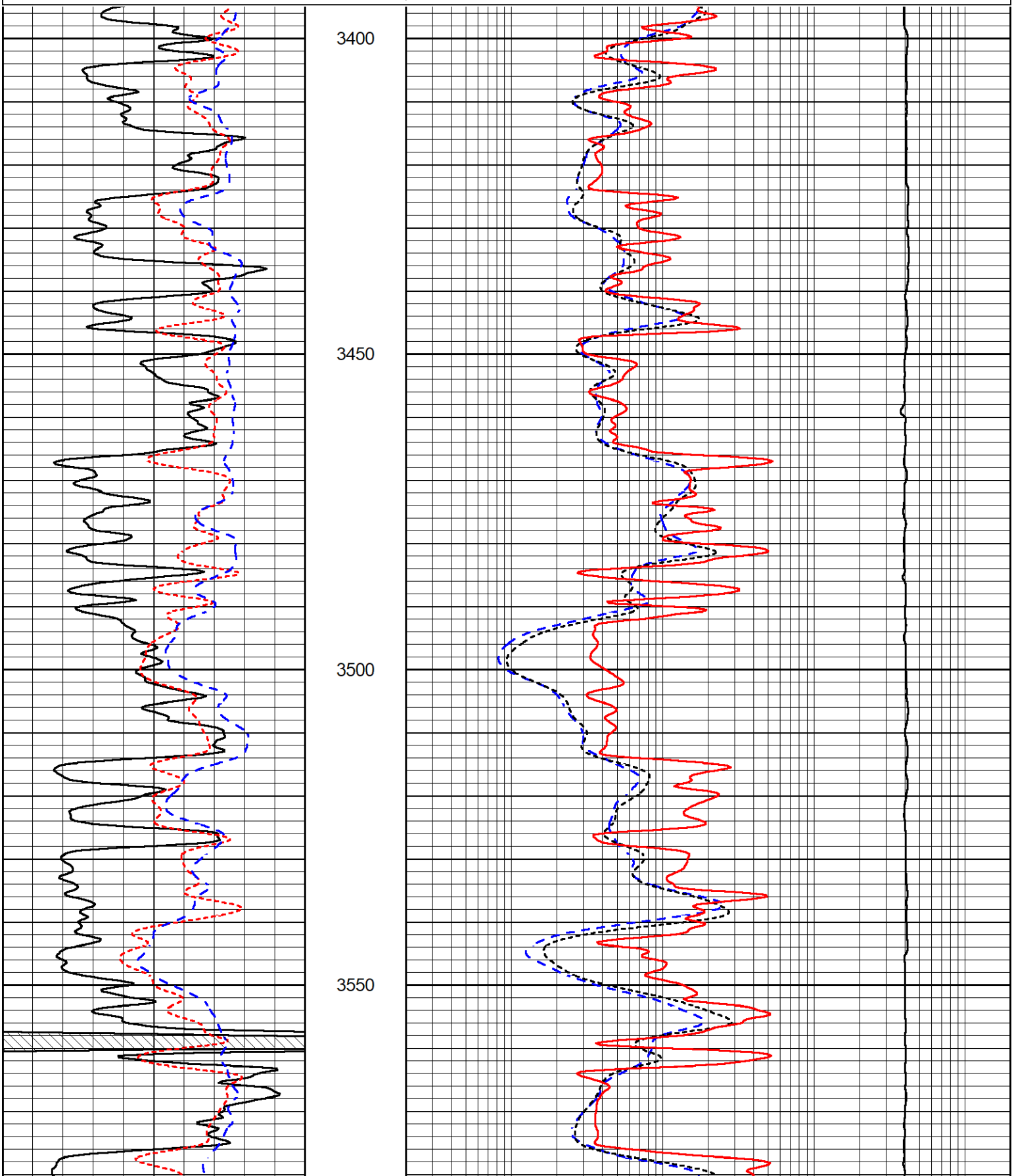
MAIN PASS

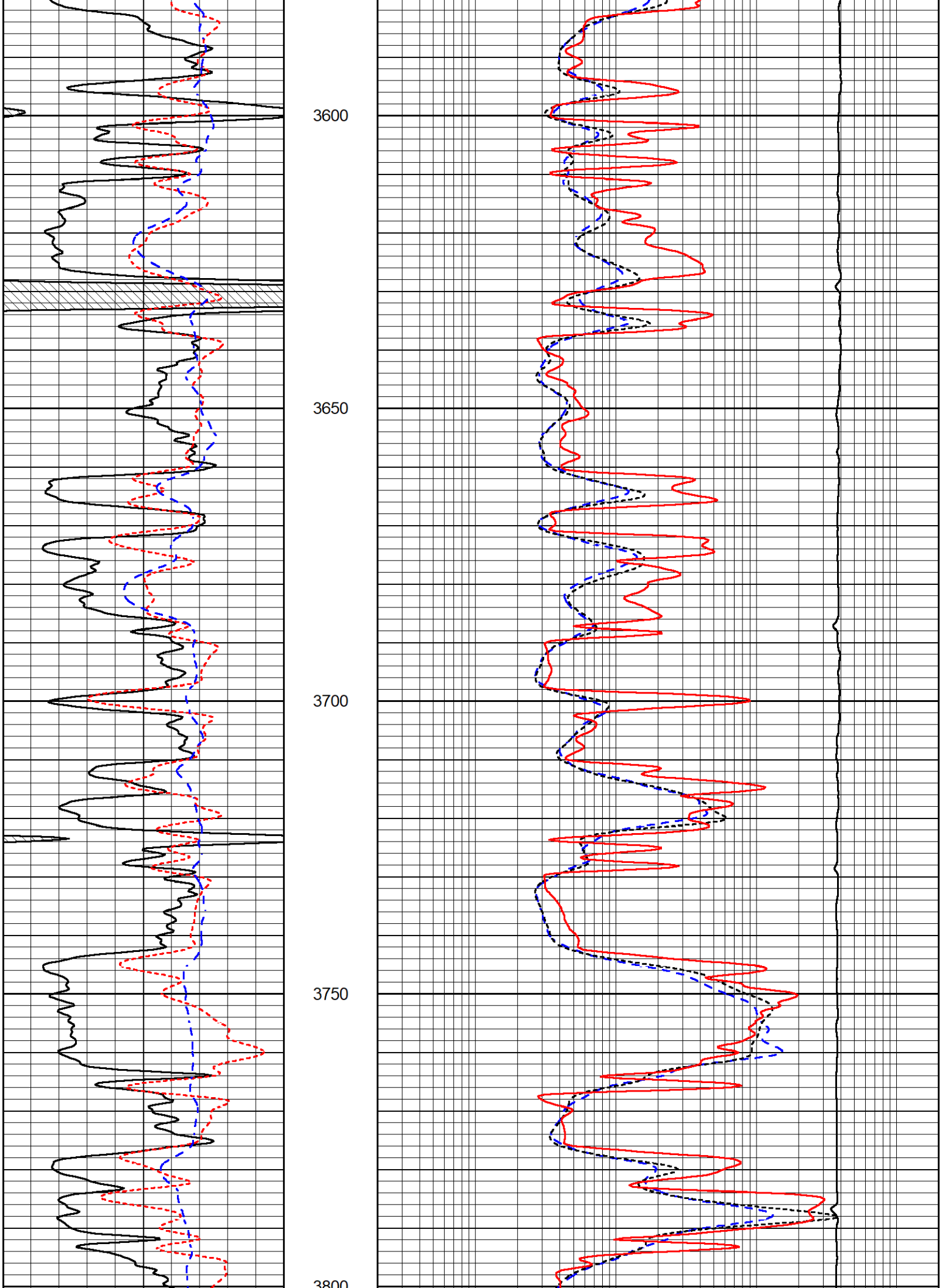
Database File	cobalt_fortin 1-3.db

Dataset Pathname	stack/pass4:1
Presentation Format	_dil
Dataset Creation	Tue Jun 13 13:10:34 2023
Charted by	Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
50	RXORT	250
-200	SP (mV)	0

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

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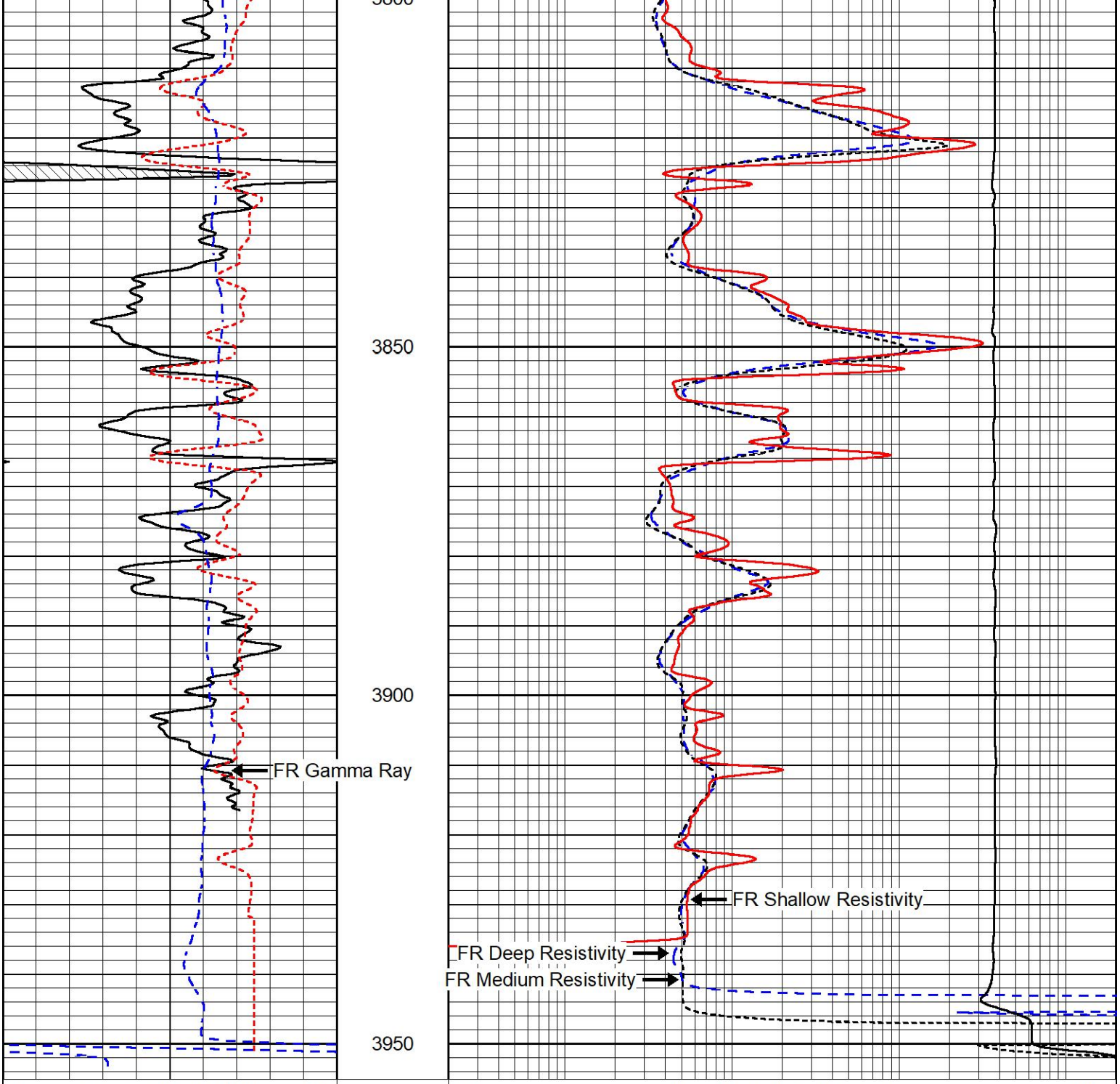
3700
3750
3800



0	Gamma Ray (GAPI)	150
50	RXORT	250
-200	SP (mV)	0

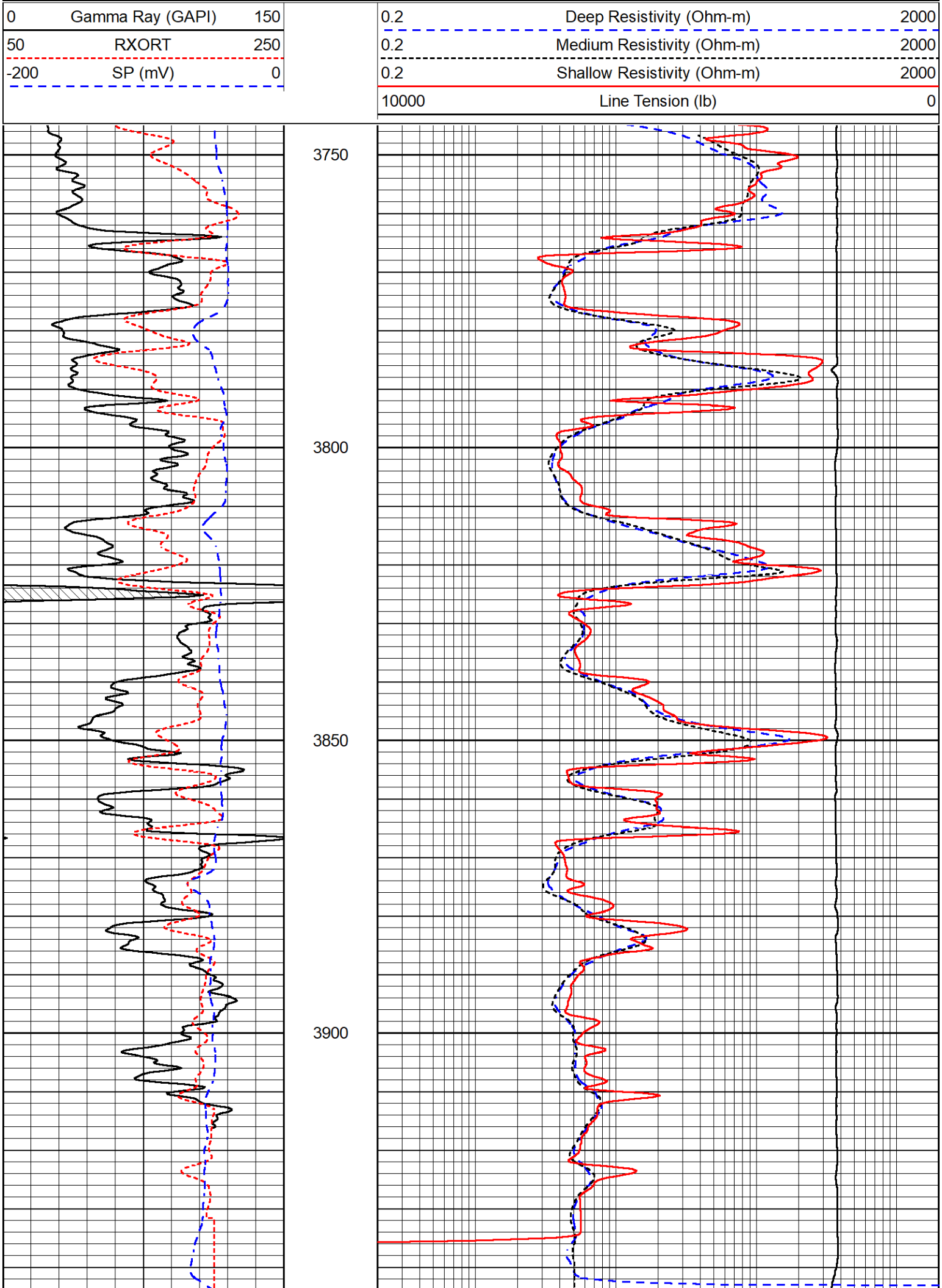
0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	Shallow Resistivity (Ohm-m)	2000
10000	Line Tension (lb)	0

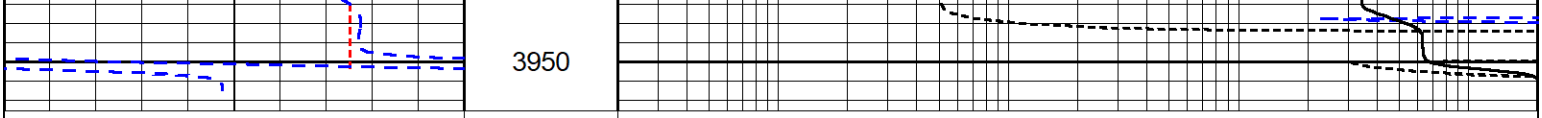
MIDWEST WIRELINE

REPEAT SECTION

REPEAT PASS

Database File	cobalt_fortin 1-3.db
Dataset Pathname	stack/pass3.1
Presentation Format	_dil
Dataset Creation	Tue Jun 13 12:42:22 2023
Charted by	Depth in Feet scaled 1:240


0 Gamma Ray (GAPI) 150
50 RXORT 250
-200 SP (mV) 0
0.2 Deep Resistivity (Ohm-m) 2000
0.2 Medium Resistivity (Ohm-m) 2000
0.2 Shallow Resistivity (Ohm-m) 2000
10000 Line Tension (lb) 0
3750
3800
3850
3900



0	Gamma Ray (GAPI)	150
50	RXORT	250
-200	SP (mV)	0

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

Calibration Report

Database File	cobalt_fortin 1-3.db
Dataset Pathname	stack/pass4.1
Dataset Creation	Tue Jun 13 13:10:34 2023

Dual Induction Calibration Report

Serial-Model:	505 HT-M&W
Surface Cal Performed:	Thu May 18 09:03:46 2023

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		m	b
Deep	167.000	835.000	0.000	255.800	mmho/m	0.480	-58.000
Medium	1348.000	1348.000	0.000	255.800	mmho/m	0.395	-49.500

Compensated Density Calibration Report

Serial-Model:	303-03-M&W
Source #:	21170B
Master Calibration Performed:	Tue May 16 07:41:35 2023

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	3841.78	5151.73	cps
Aluminum	2.655	g/cc	700.98	3068.49	cps

Spine Angle = 73.06

Density/Spine Ratio = 0.506

	Size		Reading
Small Ring	4.00	in	1.17
Large Ring	14.00	in	1.03

Compensated Neutron Calibration Report

Serial Number:	210
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:	103	
Tool Model:	M&W	
Performed:	Fri May 26 12:04:43 2023	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.5700	GAPI/cps

MIDWEST WIRELINE

Company	Cobalt Energy, LLC
Well	Fortin #1-3
Field	
County	Decatur
State	Kansas