MIDWEST WIRELINE

DUAL INDUCTION LOG

Company Darrah Oil Company, LLC
Well Knop #1-4
Field Chase-Silica
County Rice State Kansas
Location: 1240' FNL & 1315' FWL SEC 4 TWP 20S RGE 10W API # : 15-159-22871-00-00
Other Services: CNL/CDL MEL

Company Darrah Oil Company, LLC
Well Knop #1-4
Field Chase-Silica
County Rice
State Kansas

Permanent Datum	Ground Level	Elevation	1794'	Elevation
Log Measured From	Kelly Bushing			K.B. 1804'
Drilling Measured From	Kelly Bushing			D.F. N/A
				G.L. 1794'

Date	8/25/2020		
Run Number	One		
Depth Driller	3330'		
Depth Logger	3326'		
Bottom Logged Interval	3325'		
Top Log Interval	250'		
Casing Driller	8.625" @ 296'		
Casing Logger	306'		
Bit Size	7.875"		
Type Fluid in Hole	Chemical		
Salinity,ppm CL	N/A		
Density / Viscosity	N/A N/A		
pH / Fluid Loss	N/A N/A		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.32 @ 80		
Rmf @ Meas. Temp	0.24 @ 80		
Rmc @ Meas. Temp	0.43 @ 80		
Source of Rmf / Rmc	CHARTS		
Rm @ BHT	0.23 @ 109		
Operating Rig Time	4 Hours		
Max Rec. Temp. F	109		
Equipment Number	P-24		
Location	HAYS		
Recorded By	D. Schmidt		
Witnessed By	Samman Sharifaie		

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Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

Ellinwood,
East to 4th Rd, 1/2 South,
East 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	This Log Record Was Witnessed By
Engineer: D. Schmidt	Primary Witness: Samman Sharifaie
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-M&W (233-M&W)	3.00	3.50	50.00
GR	40.58					
CNLSC	37.48		CNT-M&W (207-MW)	5.50	3.50	100.00
CNSSC	36.73					
			CDL-M&W (817-947)	8.50	4.00	250.00
LSD	28.43					
DCAL	28.42					
SSD	27.93					
			ML-PSIML (PSI-01) GO Micro log tools converted to Simplec electronics	7.58	4.00	65.00
MCAL	19.83					
MI	19.83					
MN	19.83					
RLL3F	15.80					
RLL3	15.80					
			DIL-PSI HIGH TEMP (952-828)	18.50	3.50	220.00
CILD	8.00					
CILM	4.70					
SP	0.20					

Dataset: darrah_knop 1-4.db: field/well/stkml/pass4.1
Total length: 43.08 ft
Total weight: 685.00 lb
O.D.: 4.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\darrah_knop 1-4.db
Dataset field/well/stkml/pass4.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	100	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	476	0	Off	0

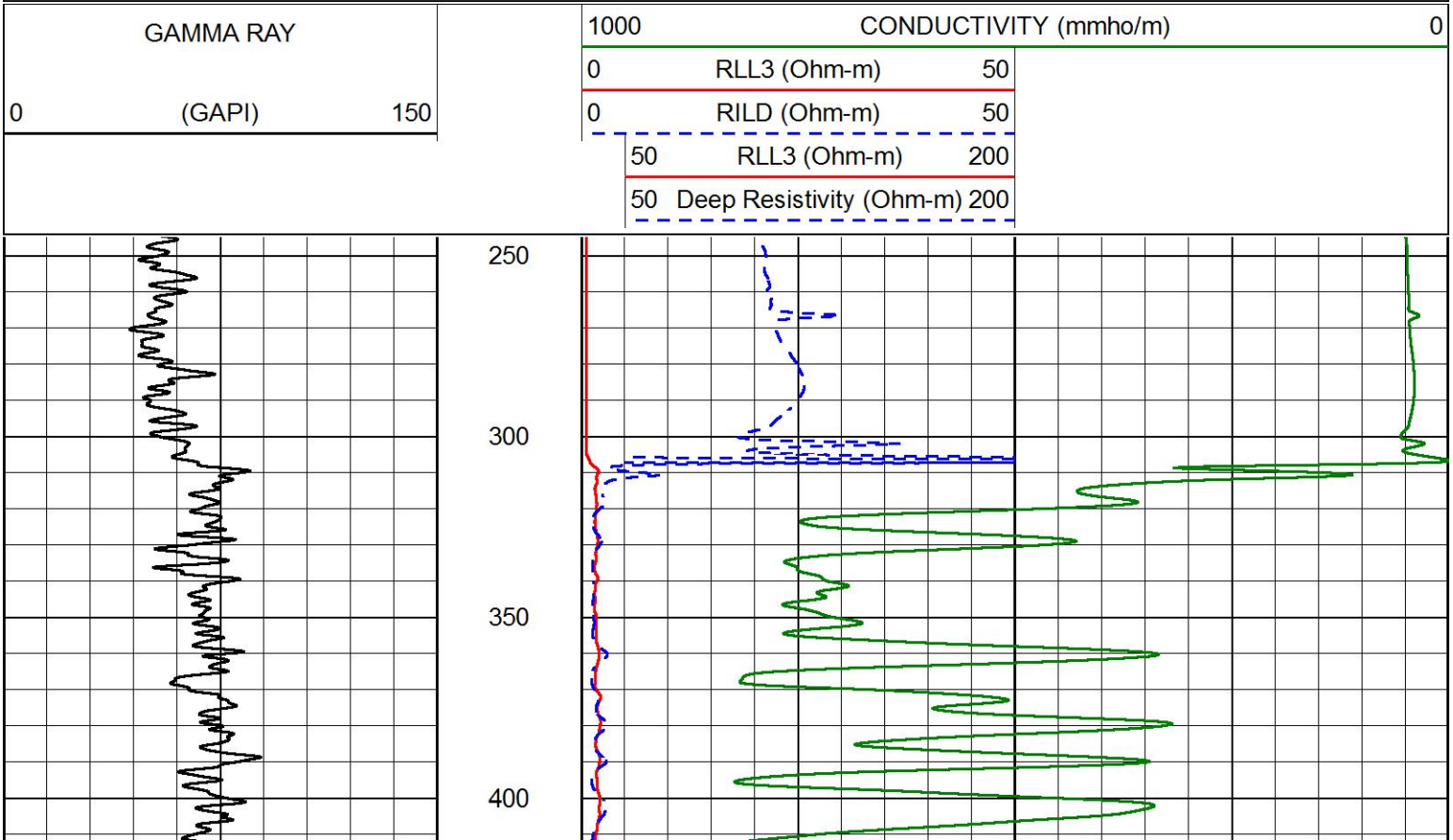
Variable Description

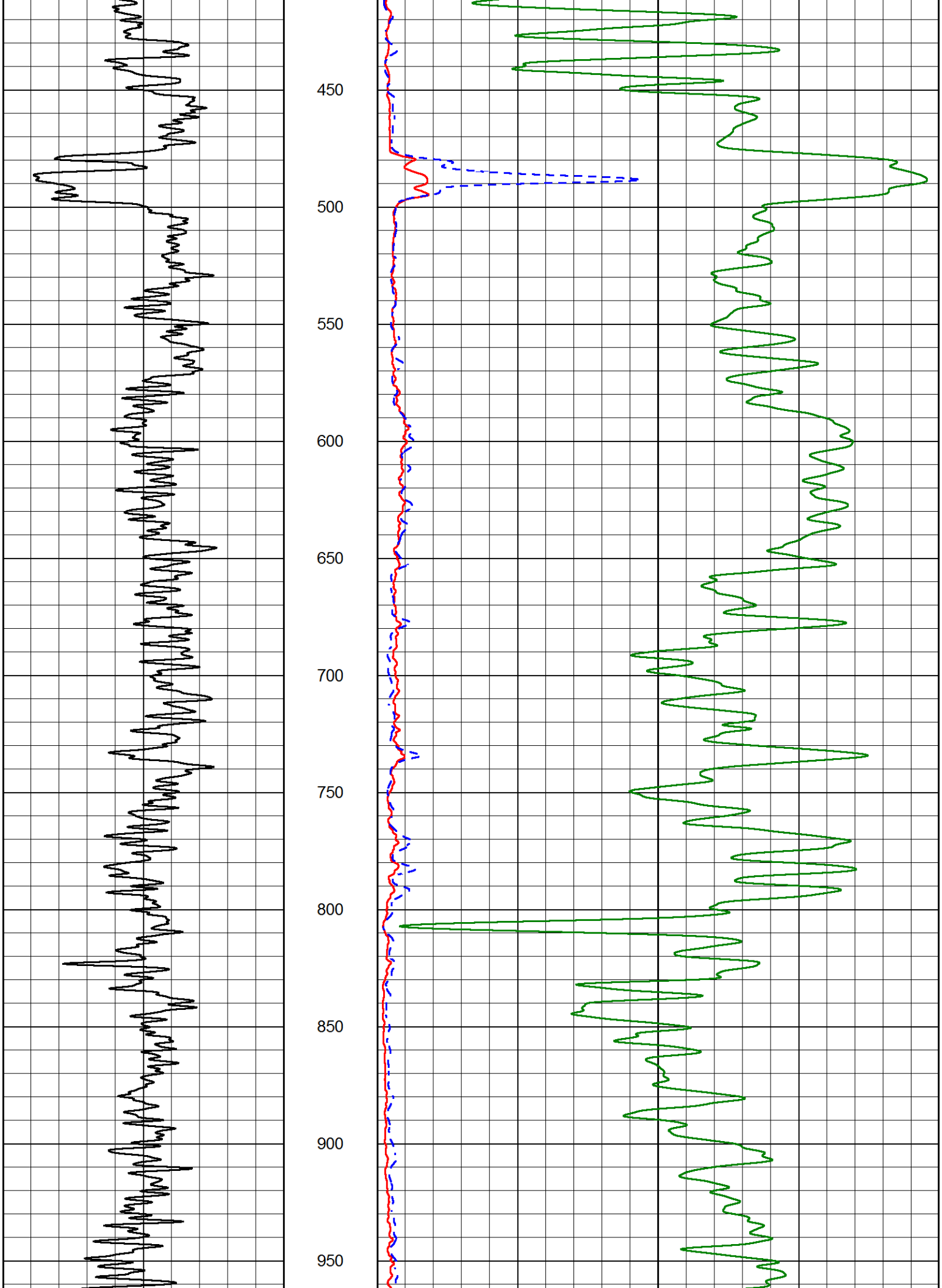
A : Cement Factor (a)
BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
FLUIDDEN : Fluid Density
M : Cement Exp (m)
MATRXDEN : Matrix Density
NPORSEL : Neutron Porosity Curve Select
PERFS : Perforation Flag
SNDERR : Deep Sonde Error Correction
SNDERRM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

MIDWEST WIRELINE

MAIN PASS

Database File	darrah_knop 1-4.db
Dataset Pathname	stkml/pass5.1
Presentation Format	_dil2in
Dataset Creation	Tue Aug 25 12:37:06 2020
Charted by	Depth in Feet scaled 1:600

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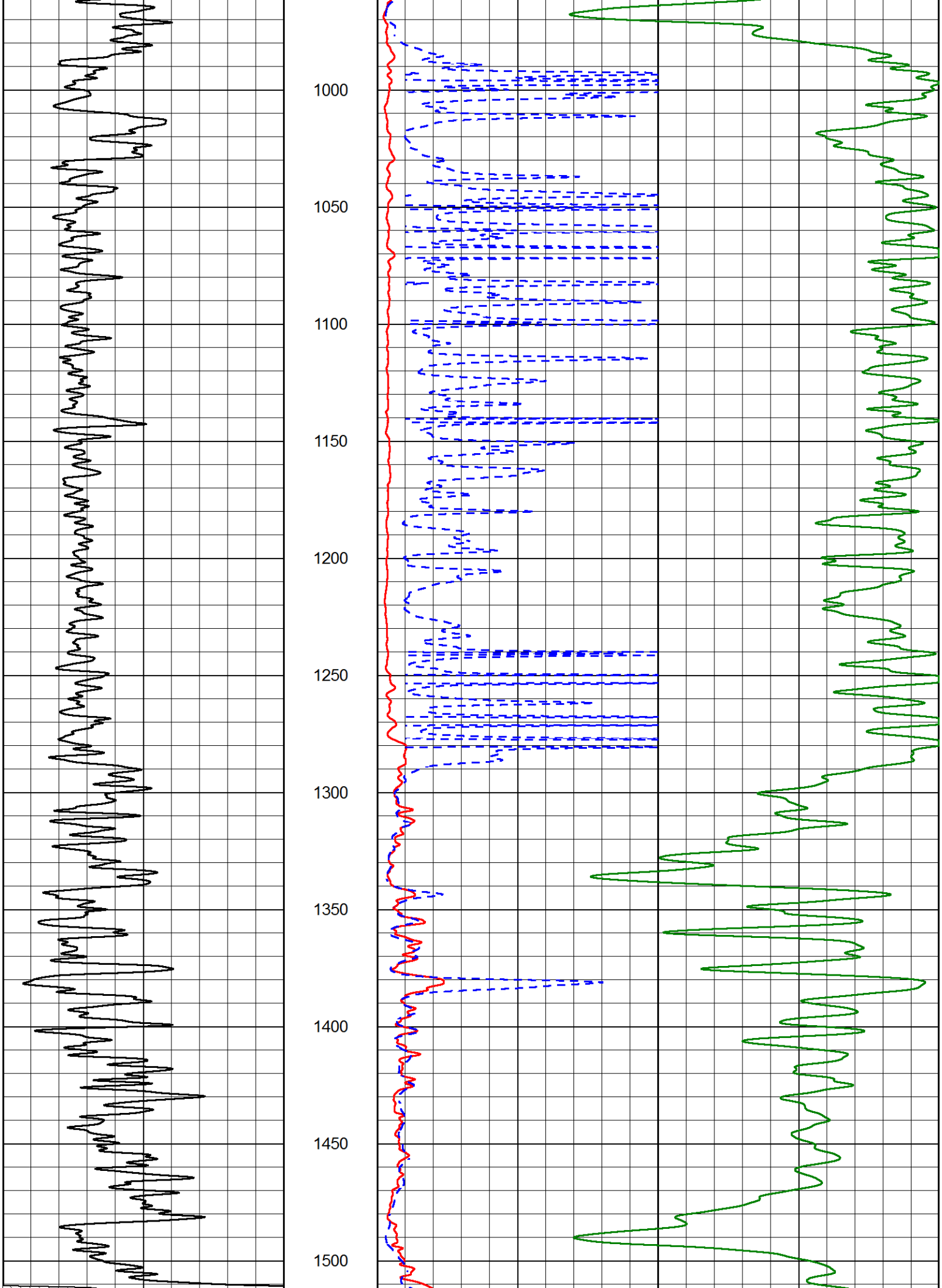
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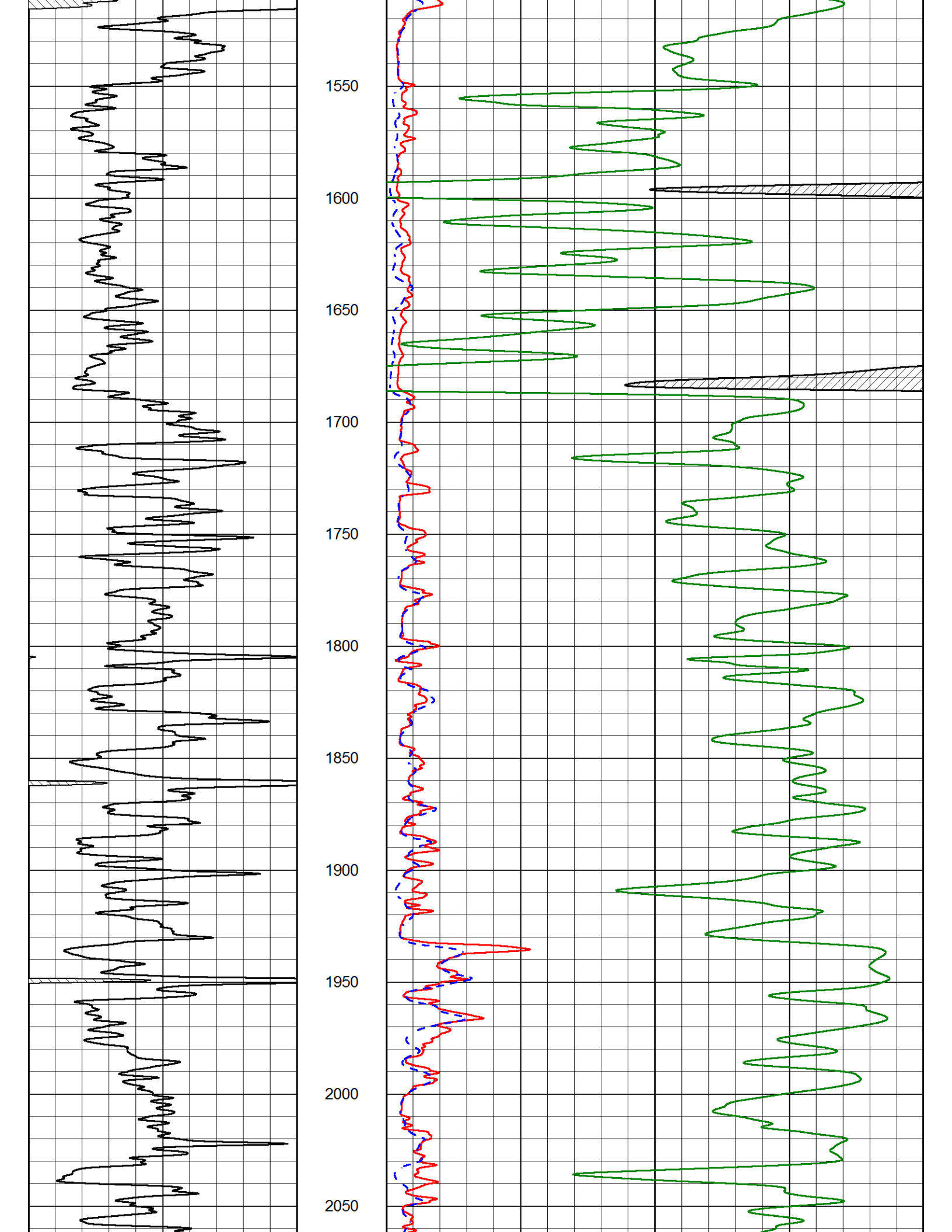
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1850
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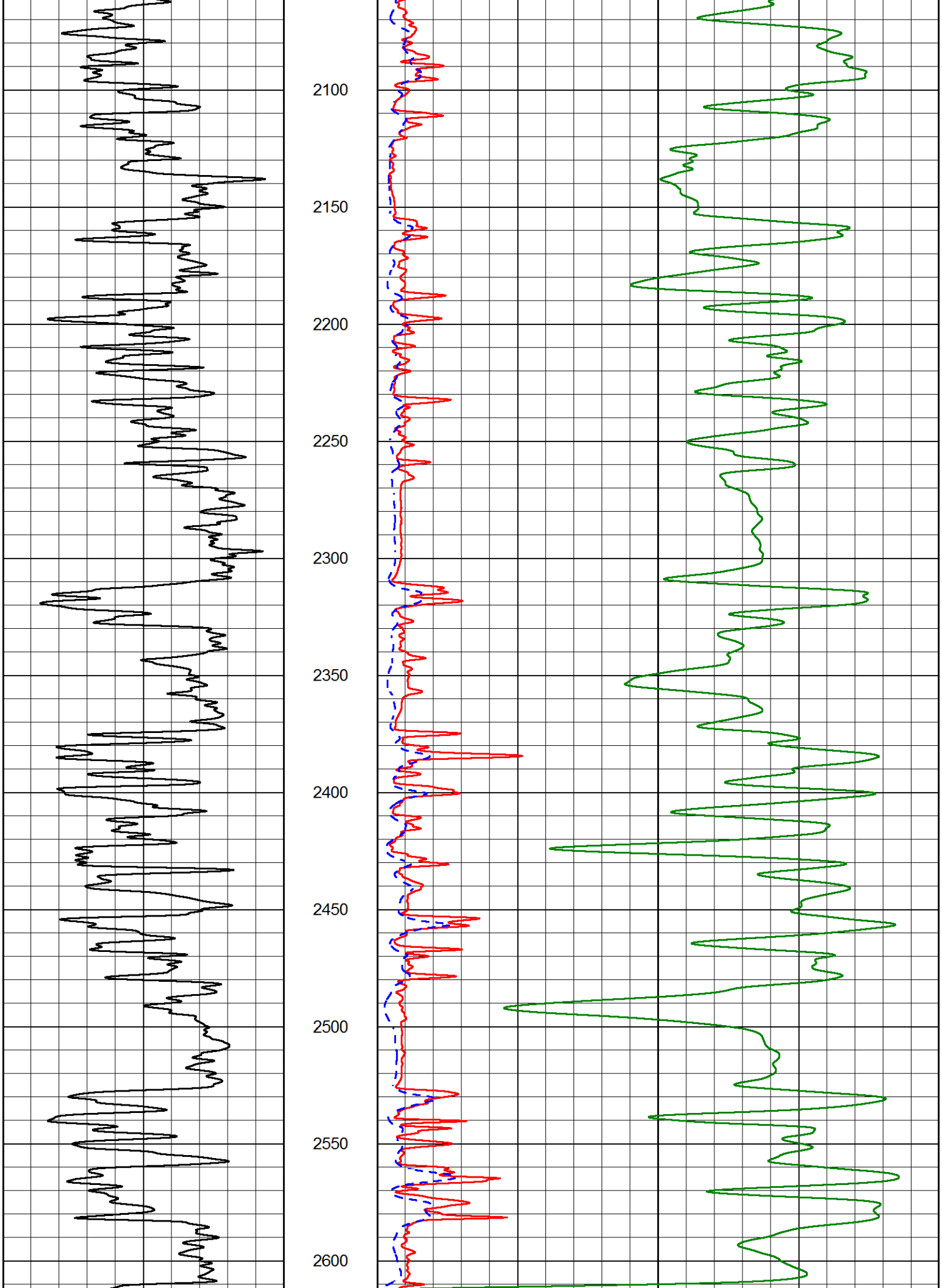
2000
2050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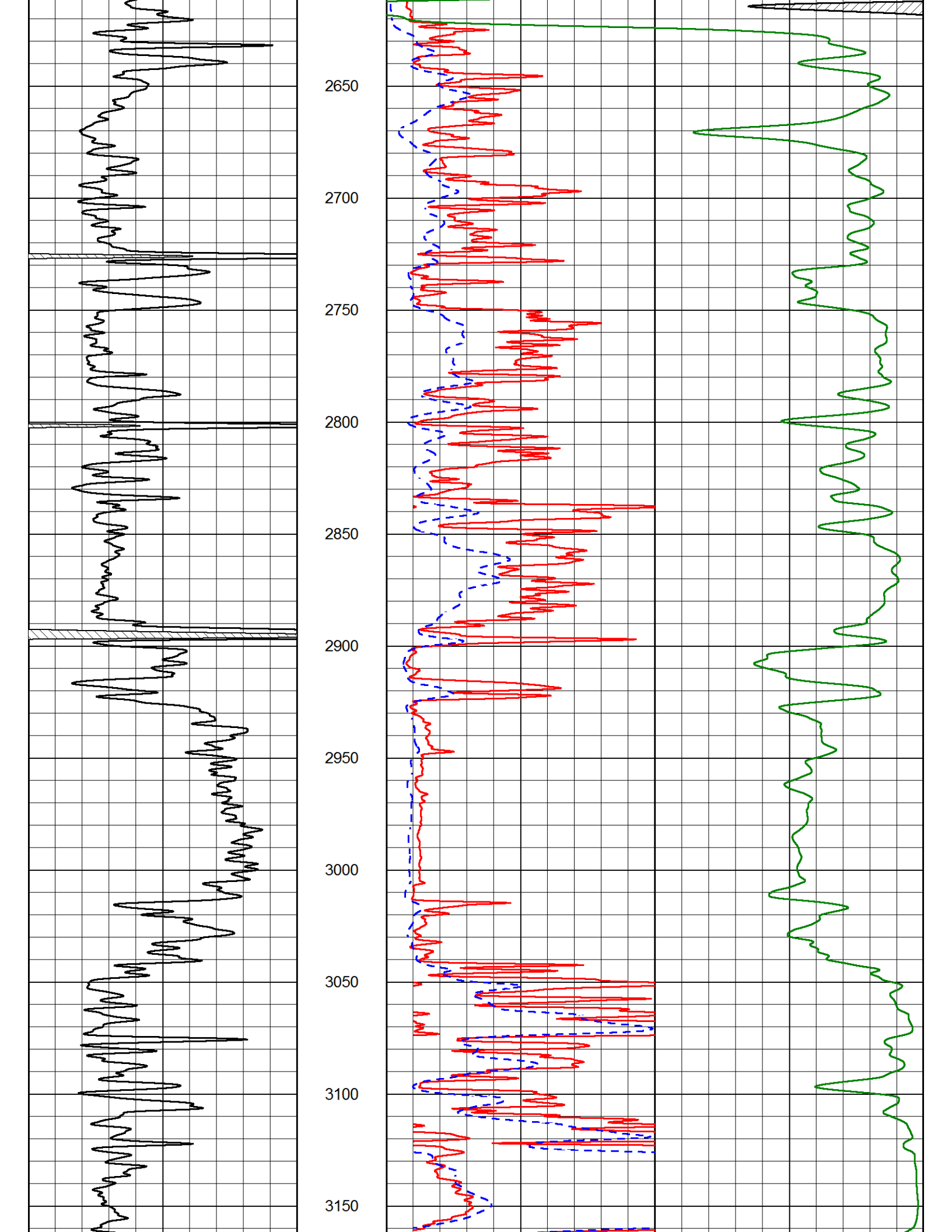
2550
2600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2900
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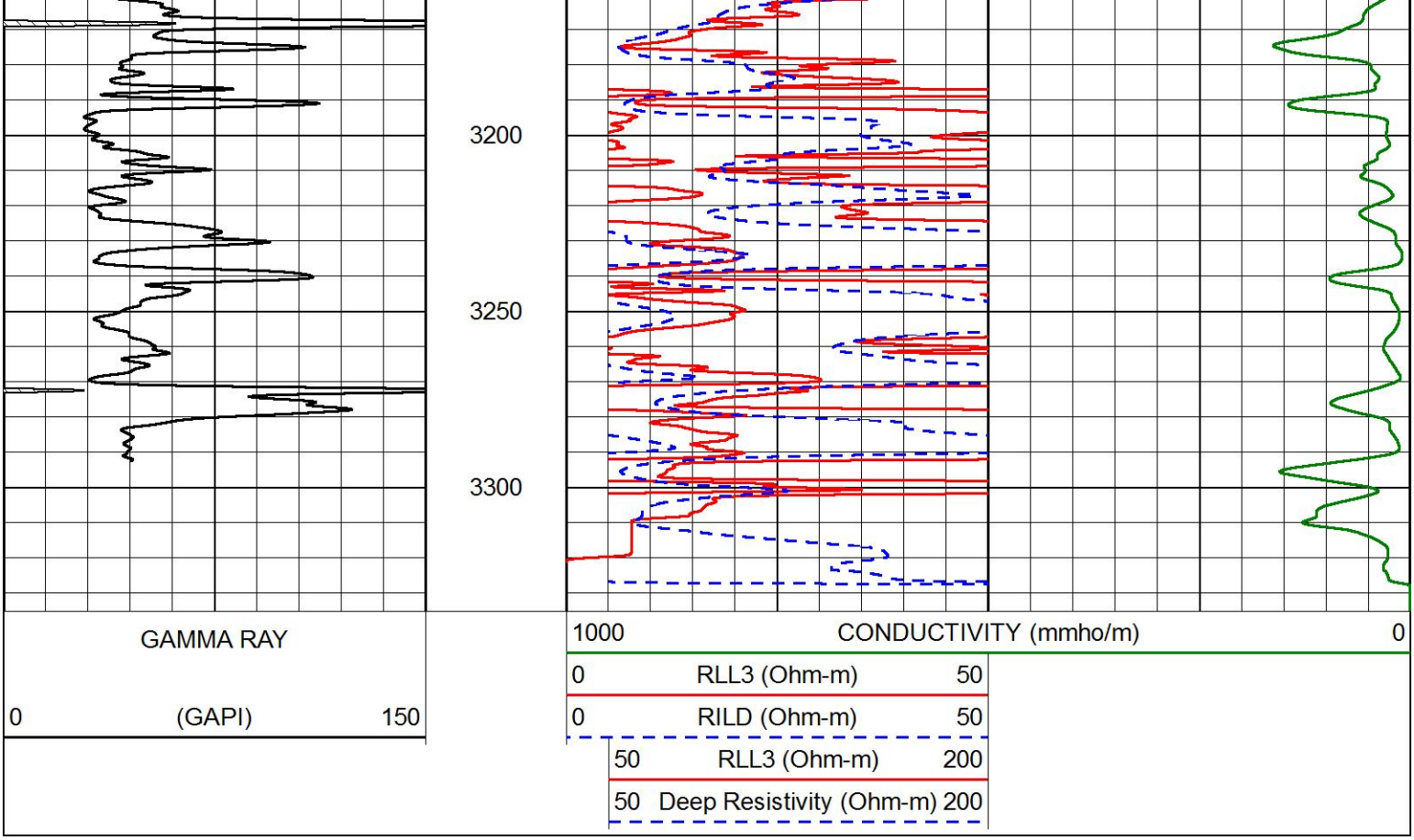
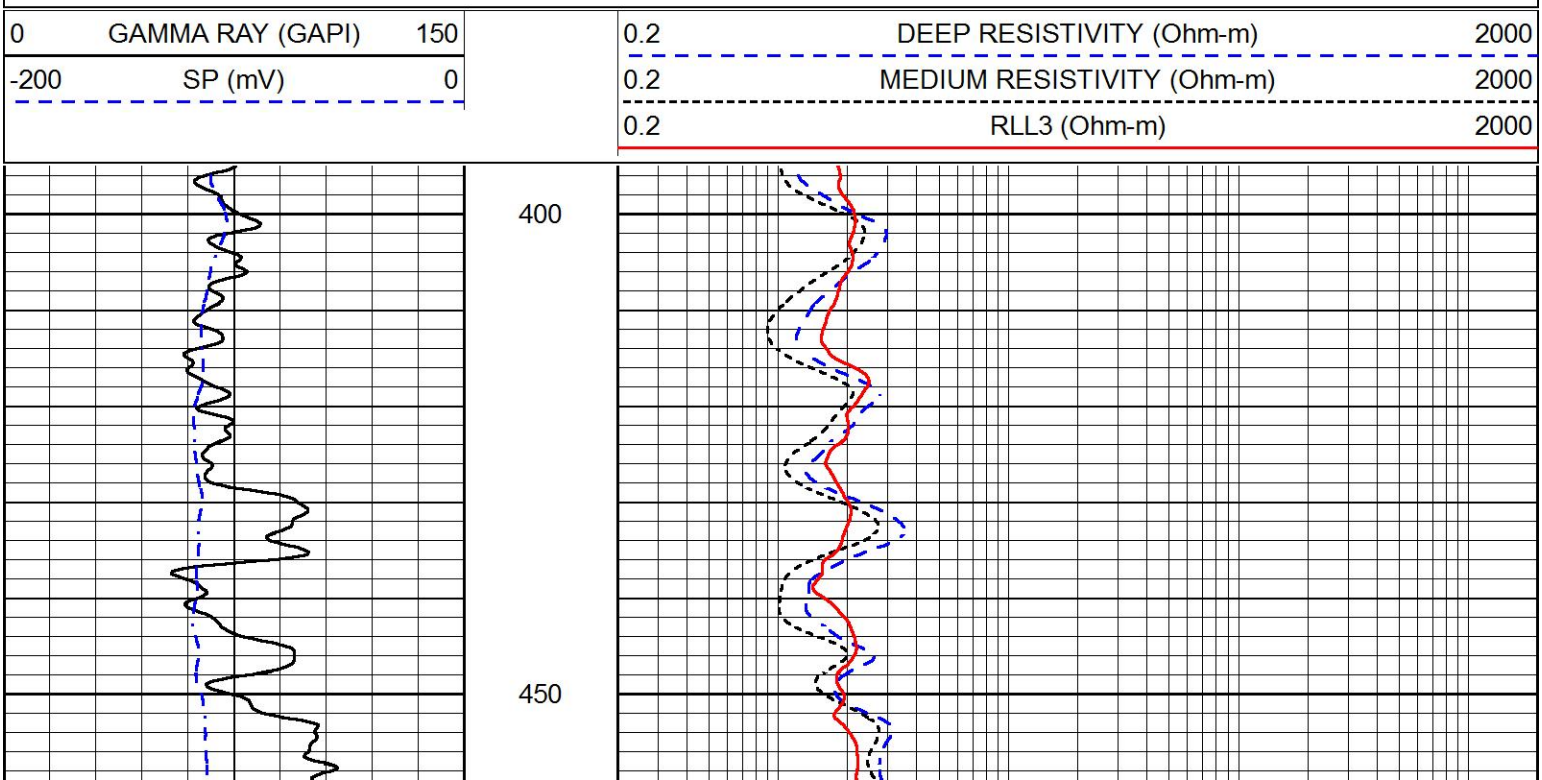
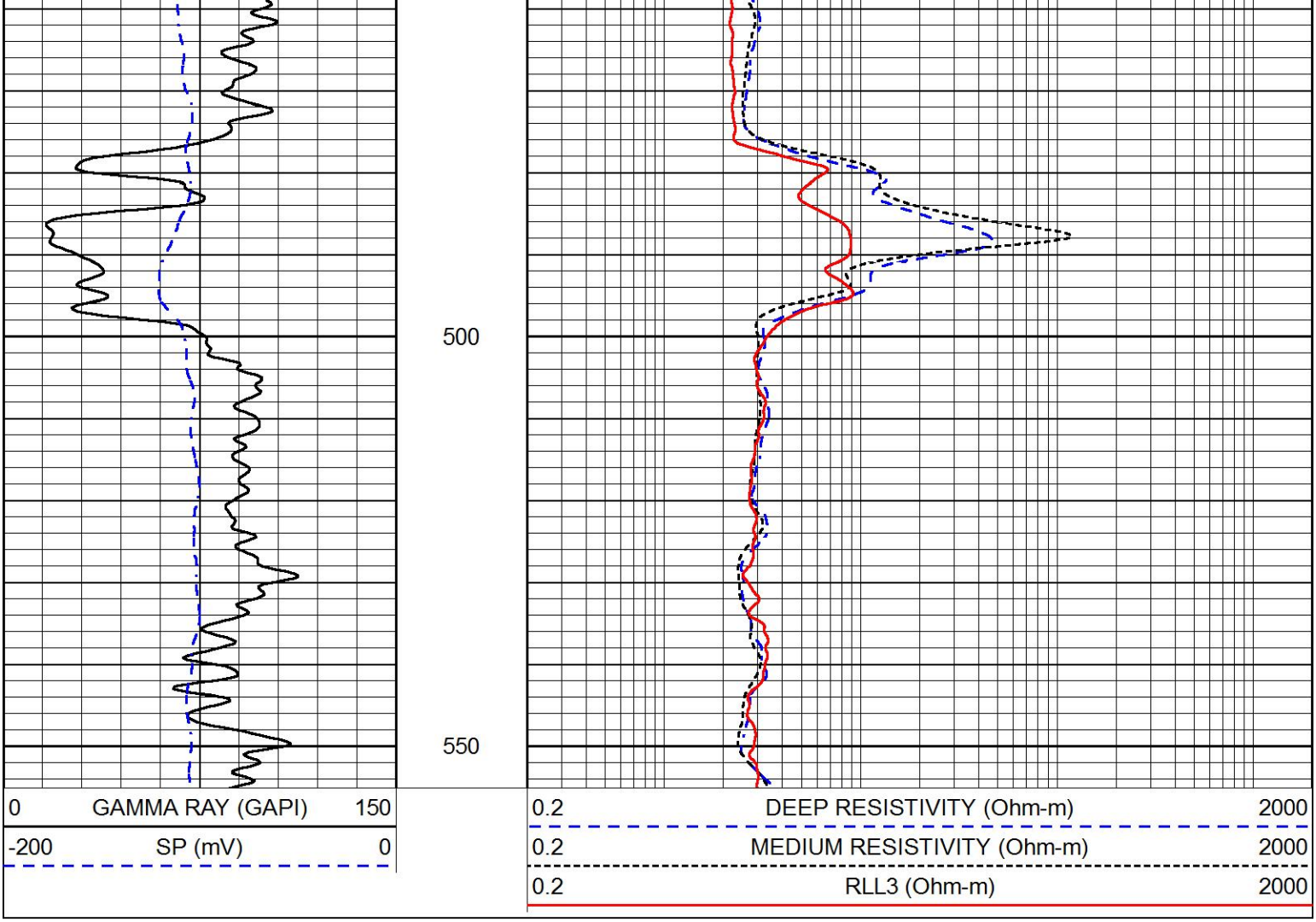


MAIN PASS

MIDWEST WIRELINE

Database File	darrah_knop 1-4.db
Dataset Pathname	stkml/pass5.1
Presentation Format	_dil
Dataset Creation	Tue Aug 25 12:37:06 2020
Charted by	Depth in Feet scaled 1:240

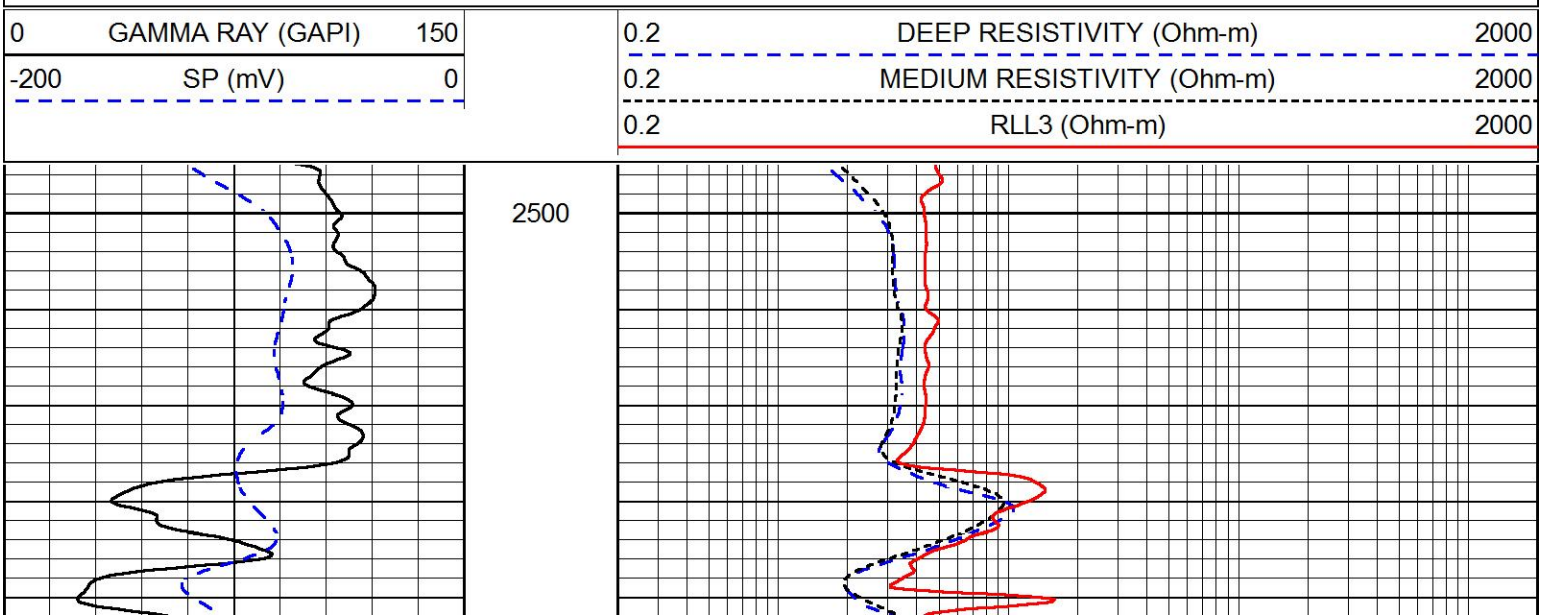


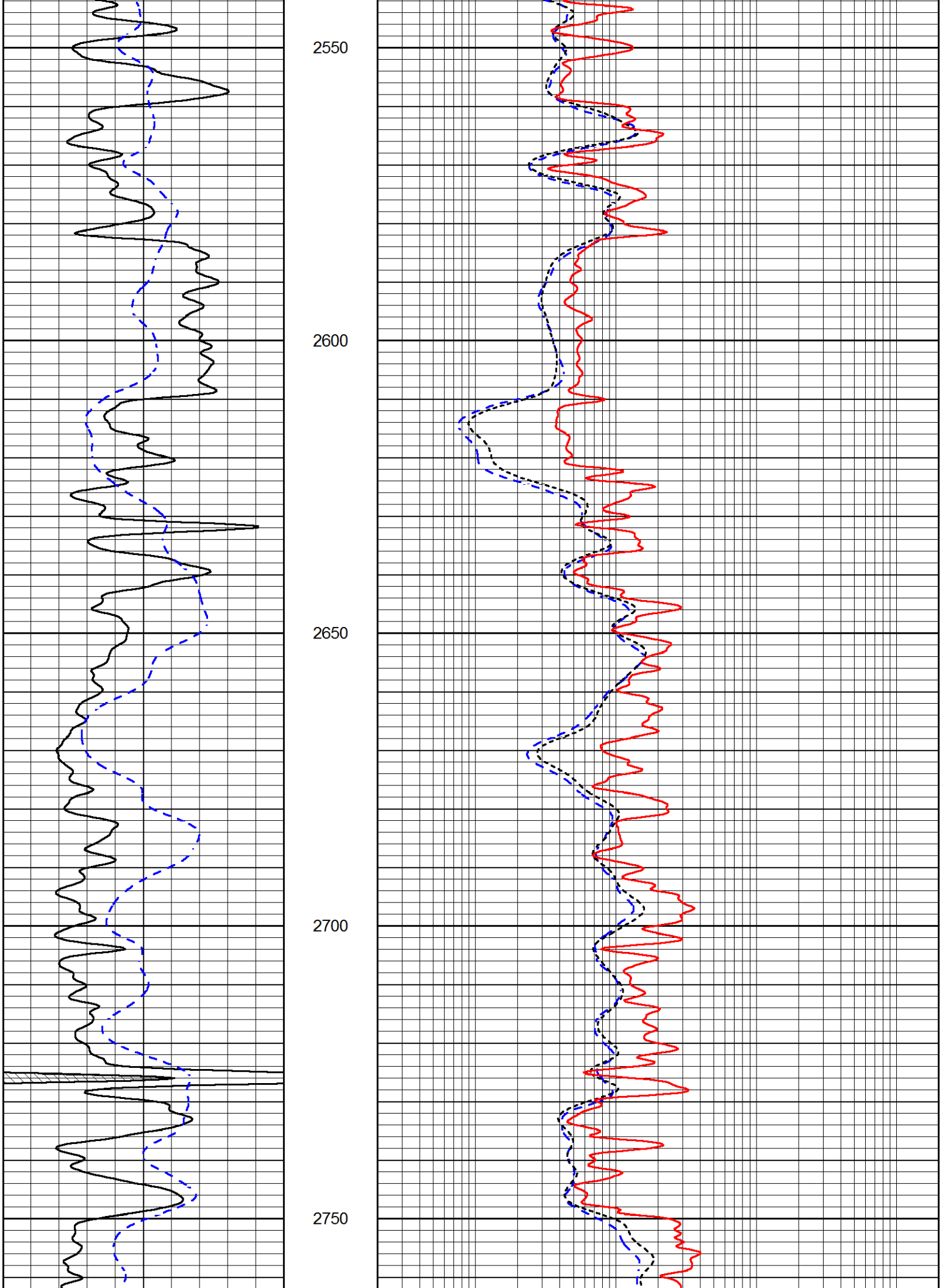


MIDWEST WIRELINE

MAIN PASS

Database File	darrah_knop 1-4.db
Dataset Pathname	stkml/pass4.1
Presentation Format	_dil
Dataset Creation	Tue Aug 25 12:10:26 2020
Charted by	Depth in Feet scaled 1:240

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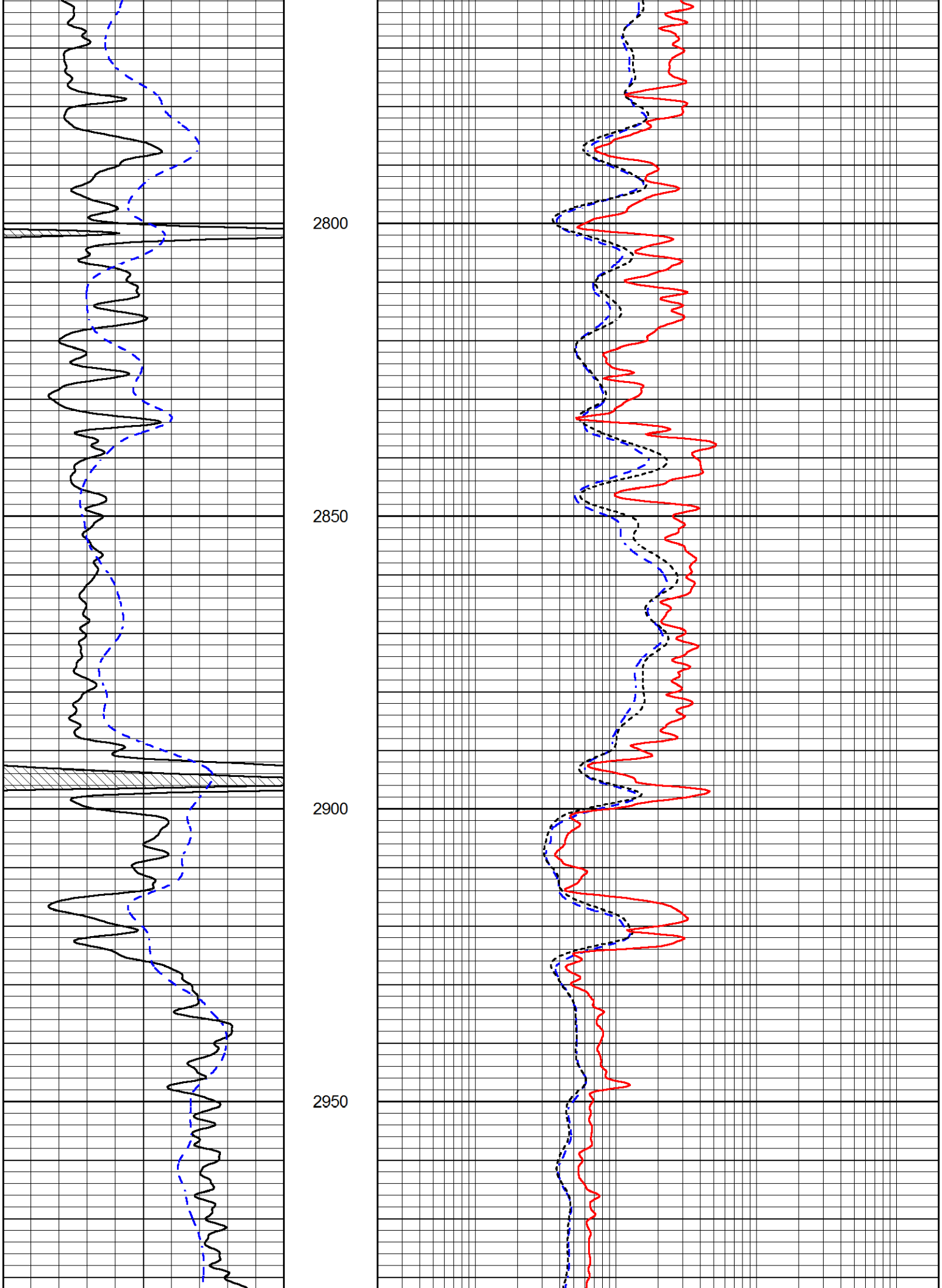
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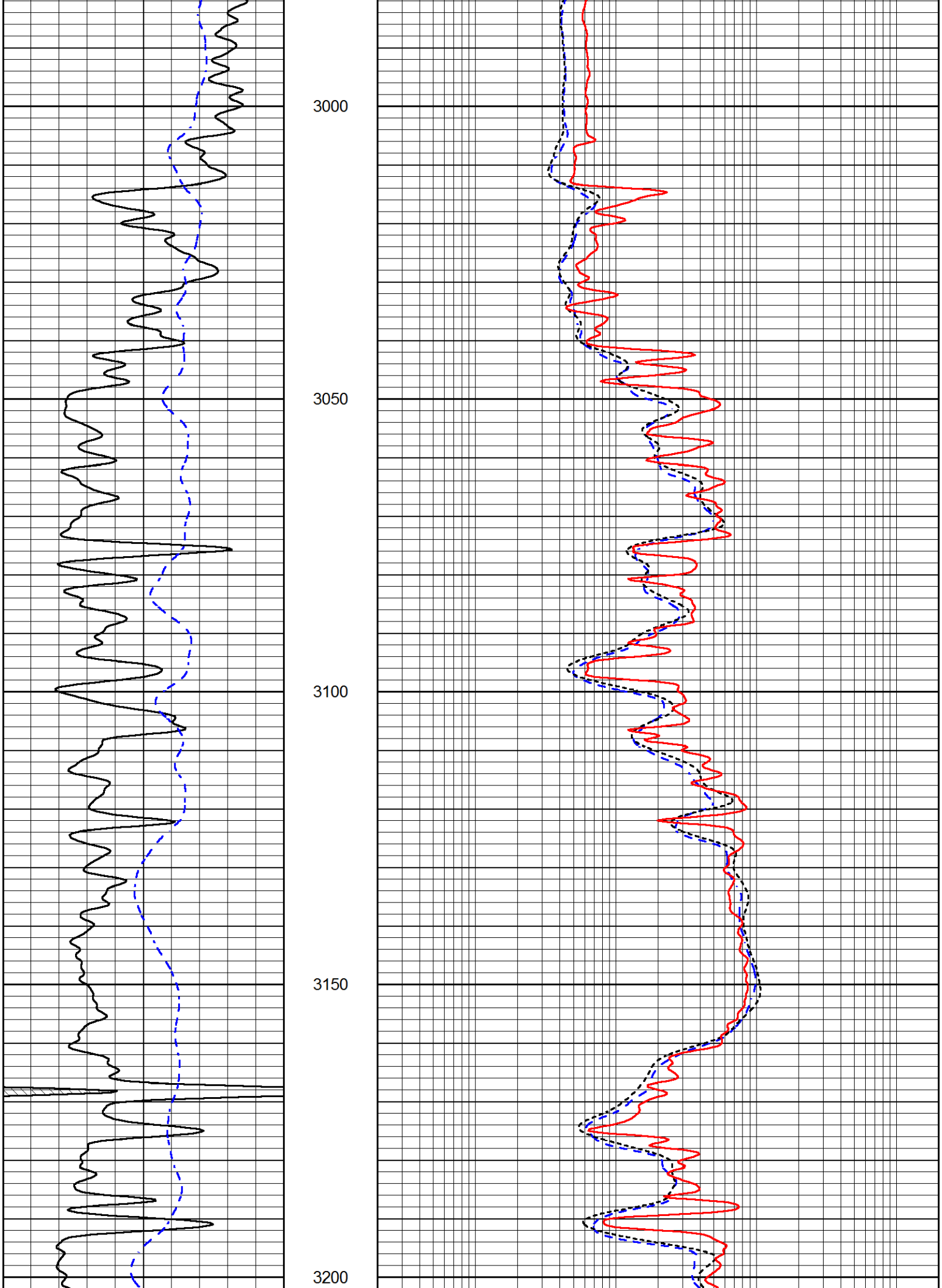
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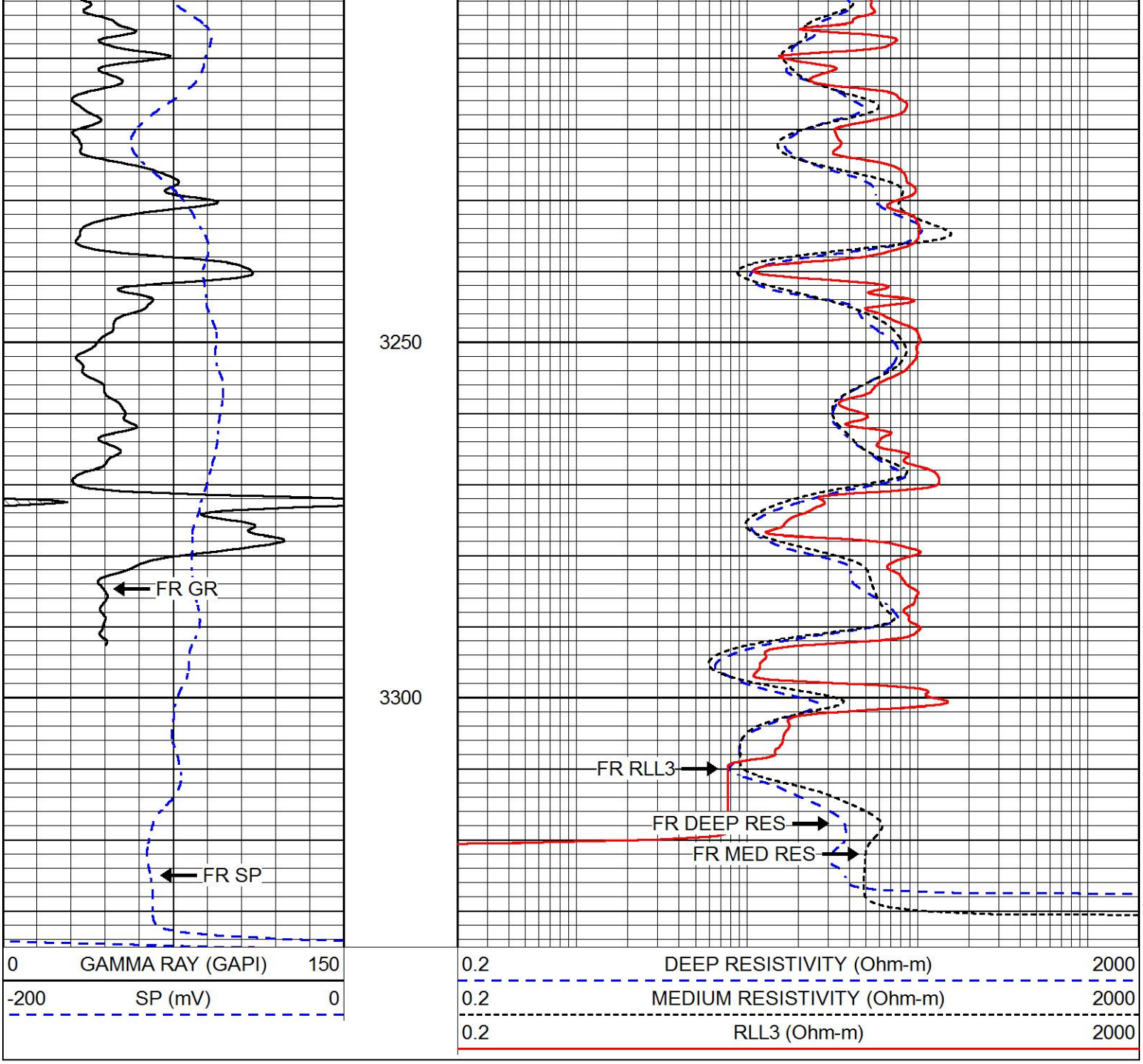


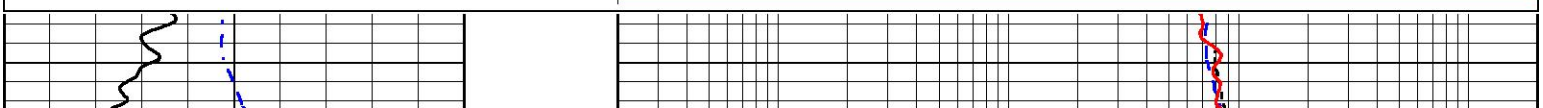
REPEAT SECTION

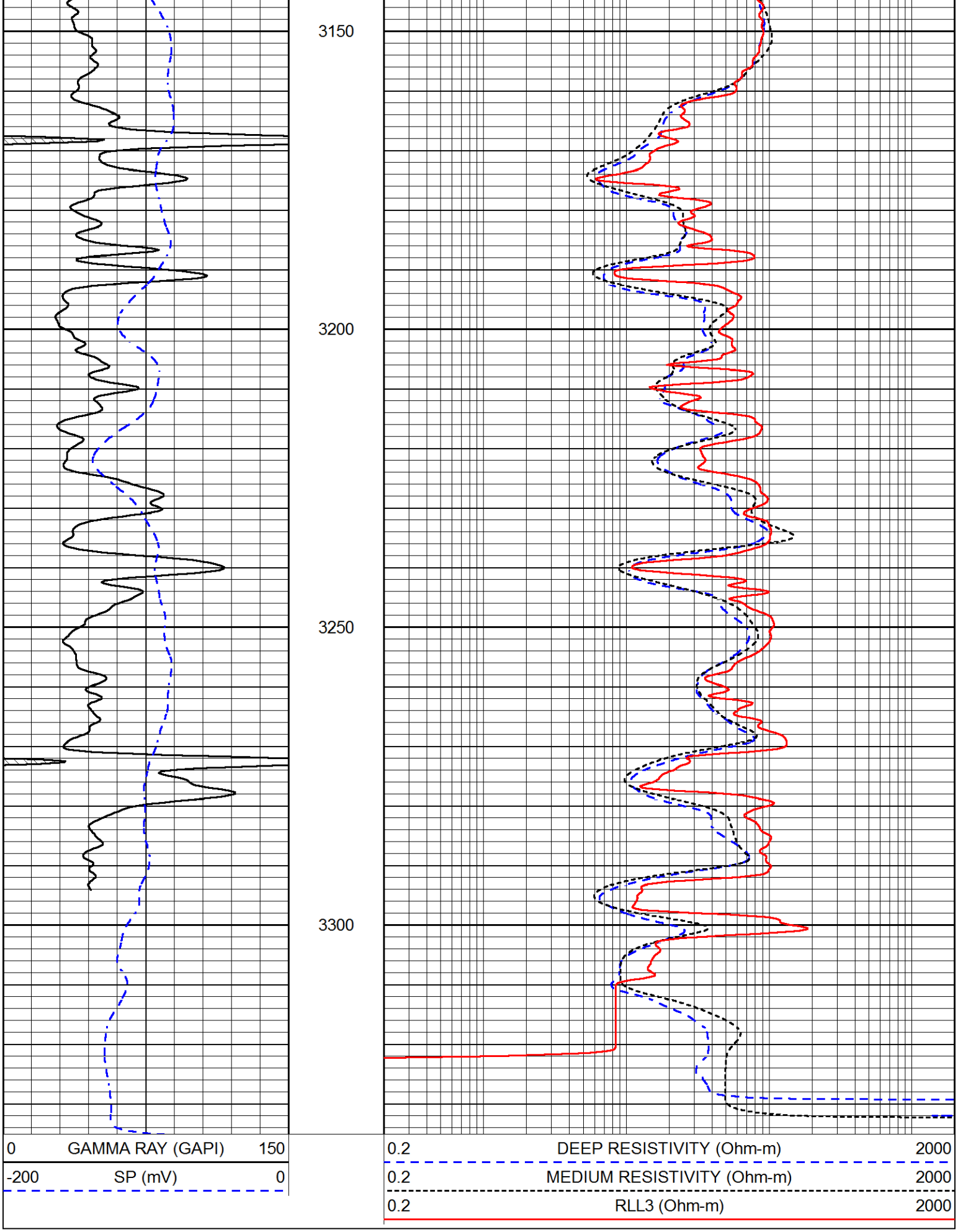
MIDWEST WIRELINE

Database File	darrah_knop 1-4.db
Dataset Pathname	stkml/pass2.1
Presentation Format	_dil
Dataset Creation	Tue Aug 25 12:10:51 2020
Charted by	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-200	SP (mV)	0

0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000





Calibration Report

Database File darrah_knop 1-4.db

Dataset Pathname stkml/pass4.1
Dataset Creation Tue Aug 25 12:10:26 2020

Dual Induction Calibration Report

Serial-Model: 952-828-PSI HIGH TEMP
Calibration Performed: Sun Jun 28 08:39:24 2020

Loop:	Readings Air	Readings Loop	References Air	References Loop		Results Gain	Results Offset
Deep	167.000	835.000	0.000	255.000	mmho/m	0.455	-26.000
Medium	0.000	1348.000	142.000	255.000	mmho/m	0.325	-25.000

Microlog Calibration Report

Serial-Model: PSI-01-PSIML
Performed: Tue Jun 16 01:32:04 2020

	Readings Zero	Readings Cal	References Zero	References Cal		Results m	Results b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	21000.0000	-1.5000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	21000.0000	-0.9000
Caliper	1.0033	1.0841	5.0000	16.5000	in	142.3500	-138.6500

Compensated Density Calibration Report

Serial-Model: 817-947-M&W
Source / Verifier: 16955B / 2ci
Master Calibration Performed: Tue Sep 24 21:18:50 2019

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	6127.15	5922.31	cps
Aluminum	2.675	g/cc	1141.85	3762.09	cps

Spine Angle = 74.89
Density/Spine Ratio = 0.529

	Size		Reading
Small Ring	4.50	in	1.02
Large Ring	14.50	in	1.23

Compensated Neutron Calibration Report

Serial Number: 207-MW
Tool Model: M&W
Calibration Performed: WED FEB 13 10:30:30 2019

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: 233-M&W

Serial Number:	233-M&W	
Tool Model:	M&W	
Calibration Performed:	Fri Feb 07 01:42:40 2014	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.5500	GAPI/cps