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Pioneer Energy Services

DUAL INDUCTION LOG

Company RJM COMPANY
Well GROSSARDT NO. 3
Field KRAFT-PRUSA
County BARTON State KANSAS

Location: API #: 15-009-26184-00-00
2310' FNL & 1300' FWL
E2-SE-SW-NW
SEC 10 TWP 17S RGE 11W

Other Services
CNL/CDL
MEL/BHCS

Elevation
K.B. 1863'
D.F. N/A
G.L. 1855'

Permanent Datum GROUND LEVEL Elevation 1855'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Date	9/15/2017			
Run Number	ONE			
Depth Driller	3372'			
Depth Logger	3370'			
Bottom Logged Interval	3369'			
Top Log Interval	300'			
Casing Driller	8.625" @ 346'			
Casing Logger	347'			
Bit Size	7.875"			
Type Fluid in Hole	CHEMICAL			
Salinity,ppm CL	6,000			
Density / Viscosity	9.2 48			
pH / Fluid Loss	9.5 8.8			
Source of Sample	FLOWLINE			
Rm @ Meas. Temp	.75 @ 62			
Rmf @ Meas. Temp	.56 @ 62			
Rmc @ Meas. Temp	1.01 @ 62			
Source of Rmf / Rmc	CHARTS			
Rm @ BHT	.42 @ 110			
Operating Rig Time	4 HOURS			
Max Rec. Temp. F	110			
Equipment Number	108			
Location	HAYS			
Recorded By	J. HENRICKSON			
Witnessed By	WYATT URBAN			

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

CLAFLIN KANSAS
5 NORTH, EAST INTO

Log Measured From: KELLY BUSHING 8 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneeres.com 785-625-3858

Your Pioneer Energy Services Crew	This Log Record Was Witnessed By
Engineer: J. HENRICKSON	Primary Witness: WYATT URBAN
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\rjm_grossardt_3.db
Dataset field/well/stack/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	110	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	-120	65	Off	3370

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
			GR-M&W (89-M&W)	3.00	3.50	50.00
GR	33.00					
CNLSC	29.90		CNT-M&W (tk10-MW)	5.50	3.50	100.00
CNSSC	29.15					
			CDL-M&W (168-986)	8.50	4.00	250.00
LSD	20.85					
DCAL	20.83					
SSD	20.35					
RLL3	15.80					
RLL3F	15.79					
			DIL-M&W (1987)	18.50	3.50	220.00
CILD	8.00					

CILM	4.70					
SP	0.20					

Dataset: rjm_grossardt_3.db: field/well/stack/pass3.1
Total length: 35.50 ft
Total weight: 620.00 lb
O.D.: 4.00 in

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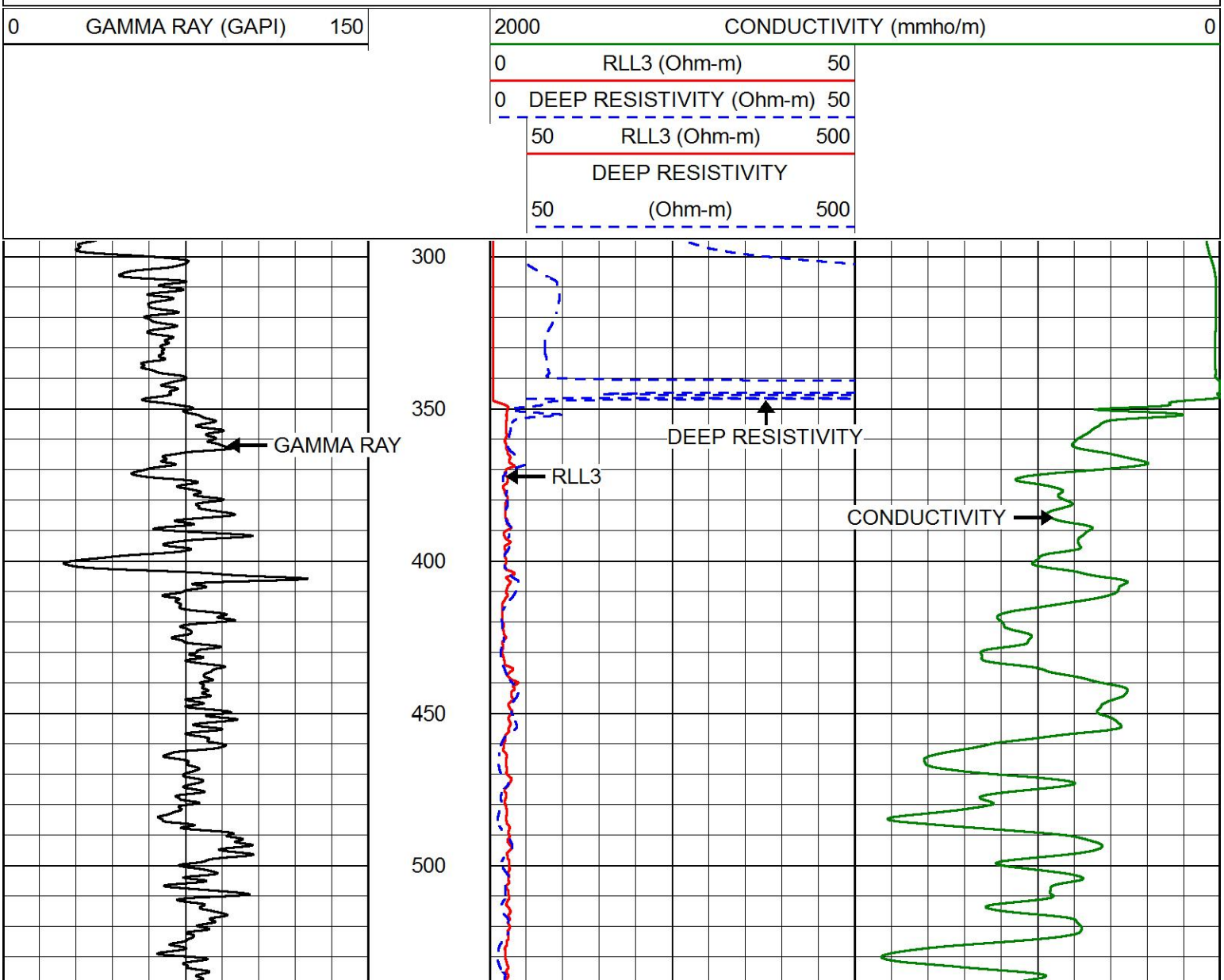
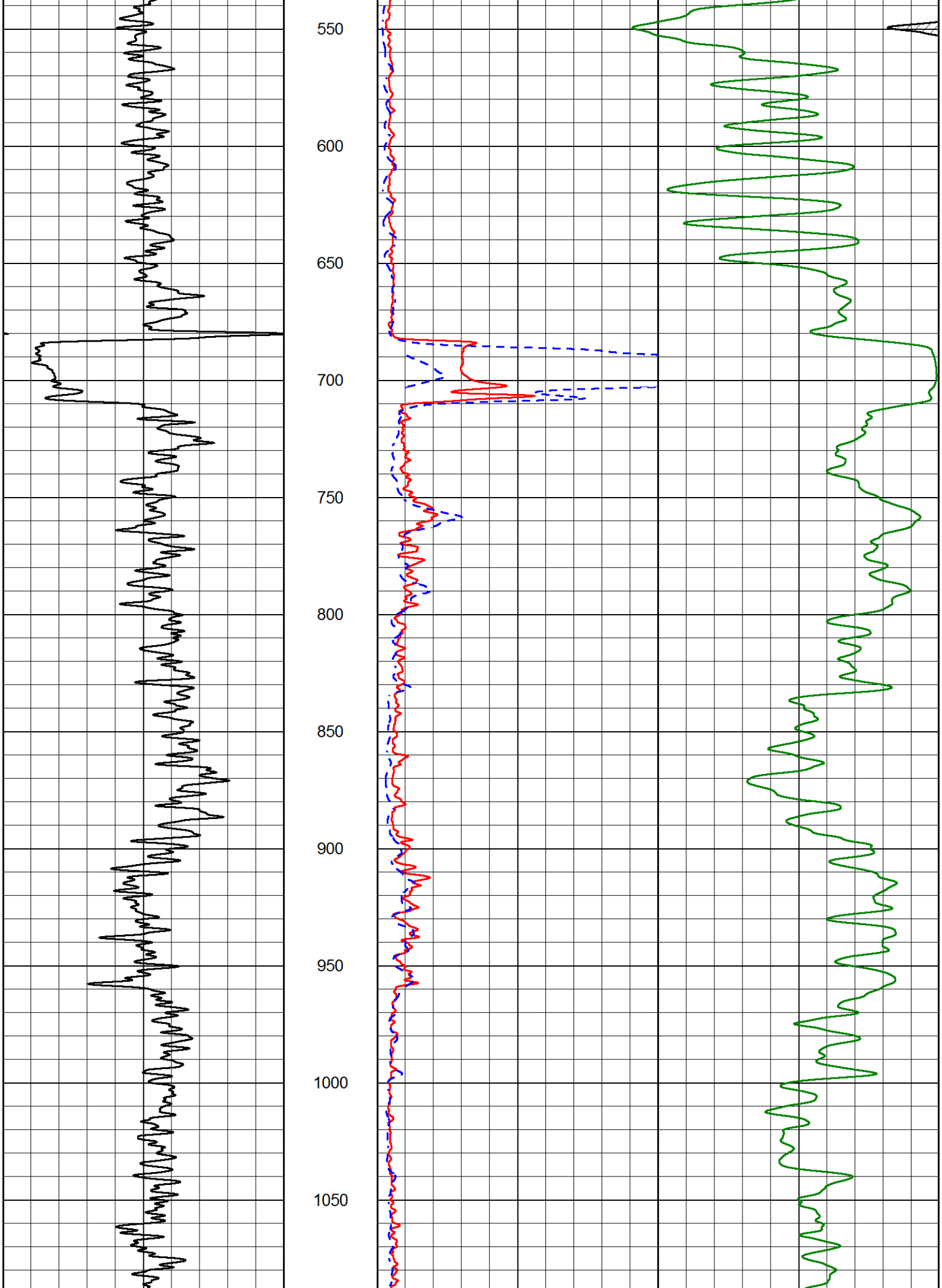
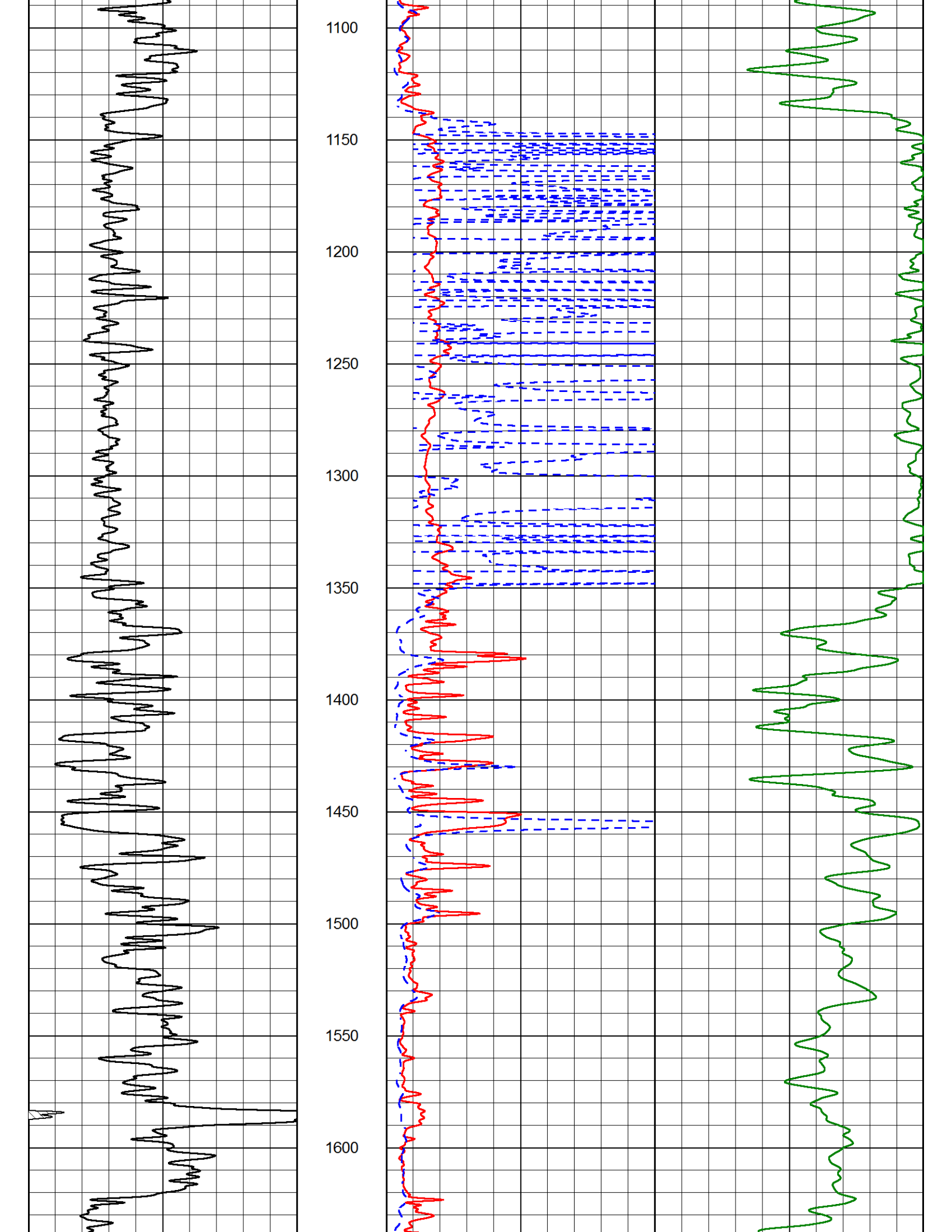
MAIN PASS

Database File	rjm_grossardt_3.db
Dataset Pathname	stack/pass3.1
Presentation Format	dil2in
Dataset Creation	Fri Sep 15 05:04:03 2017
Charted by	Depth in Feet scaled 1:600




550
600
650
700
750
800
850
900
950
1000
1050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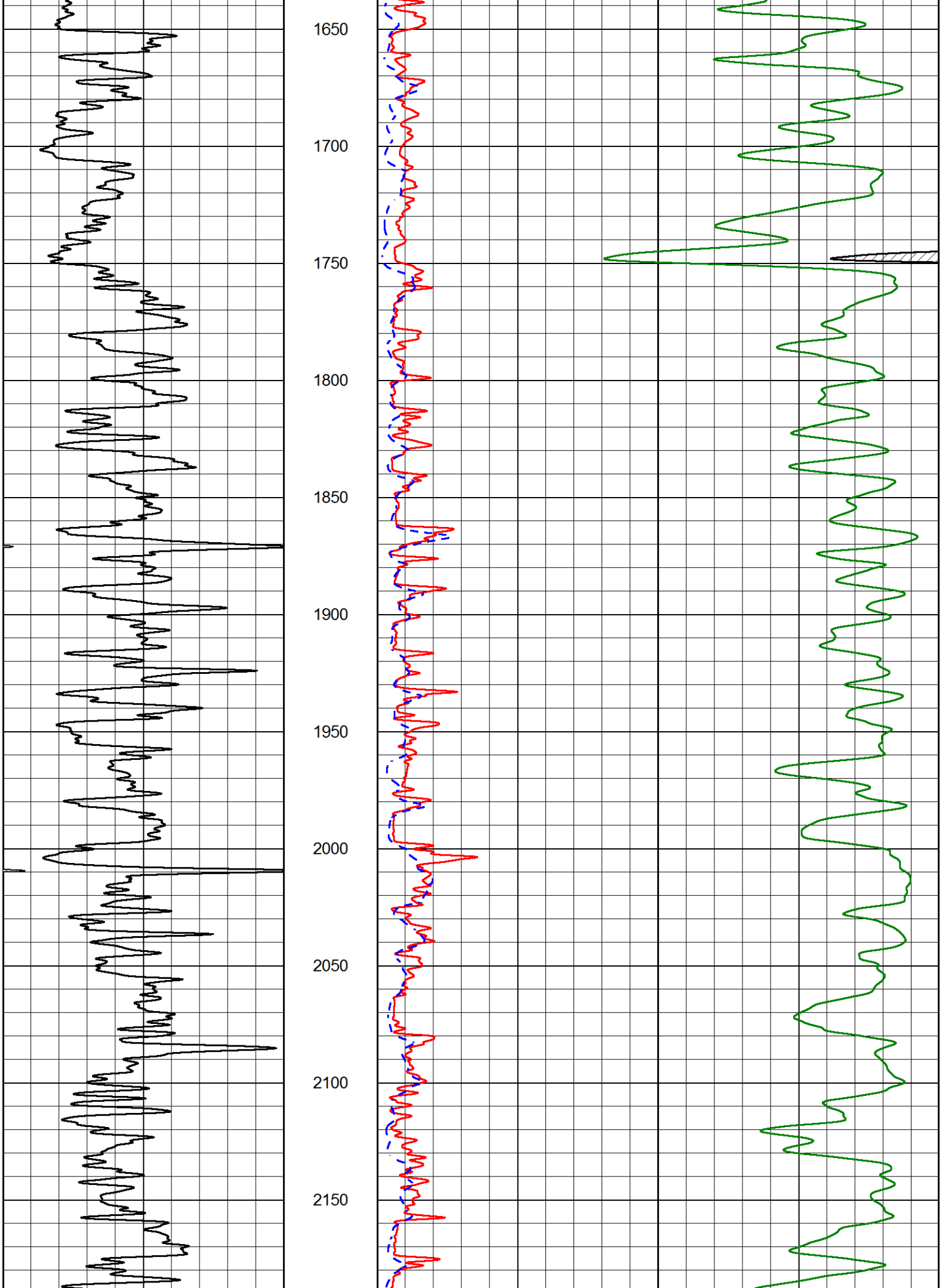
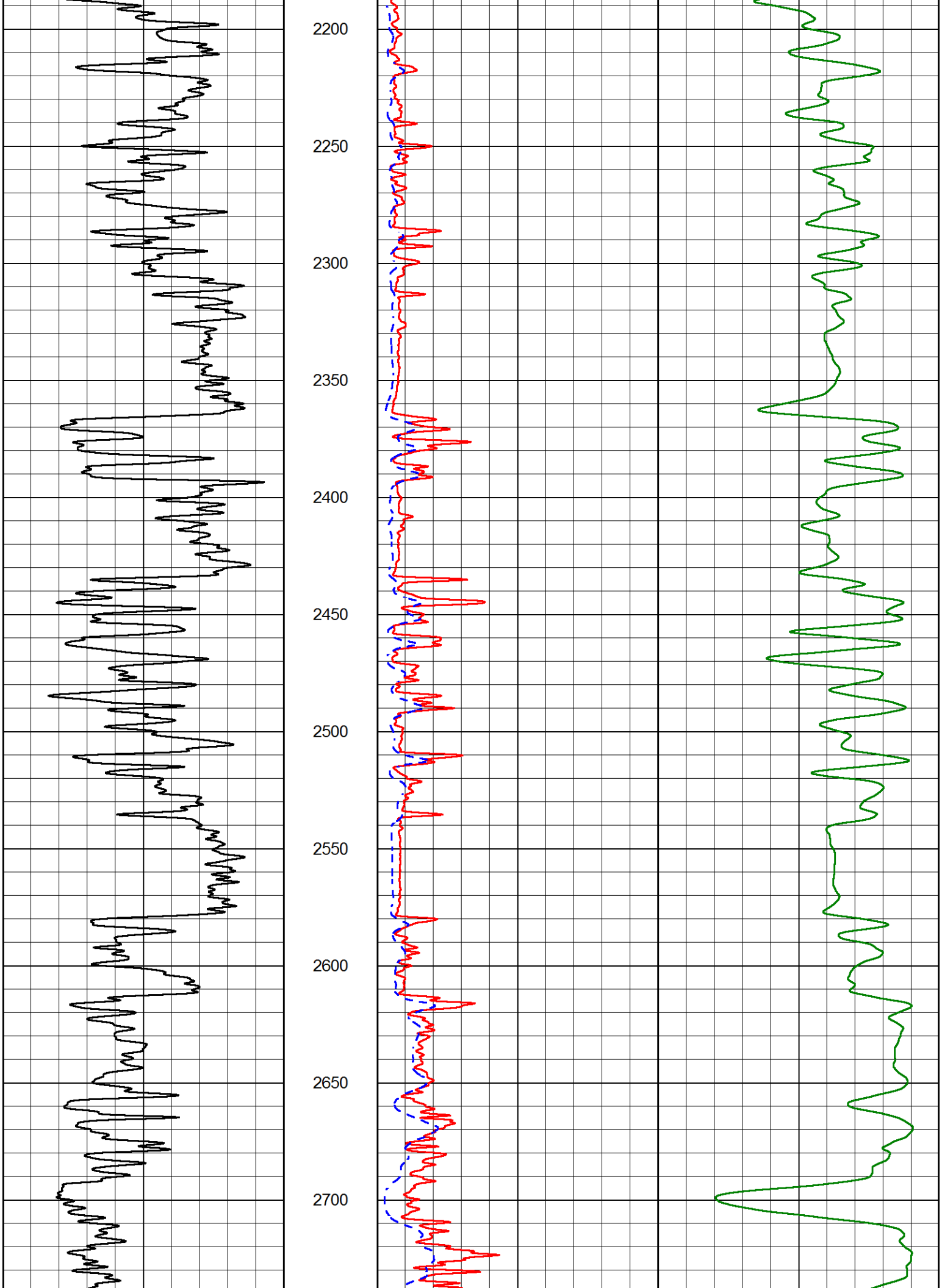
1350
1400
1450
1500
1550
1600


1650
1700
1750
1800
1850
1900
1950
2000
2050
2100
2150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2250
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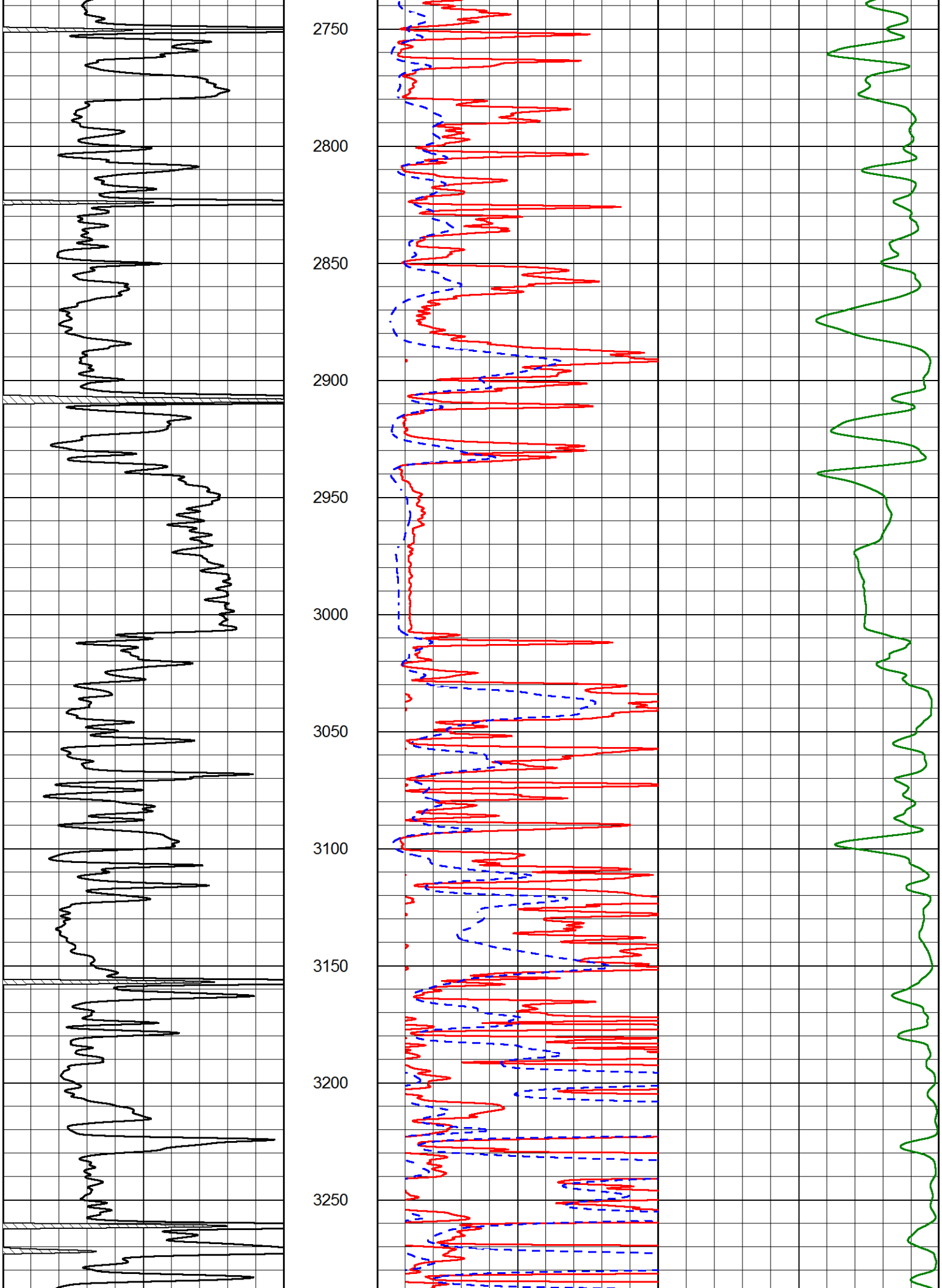
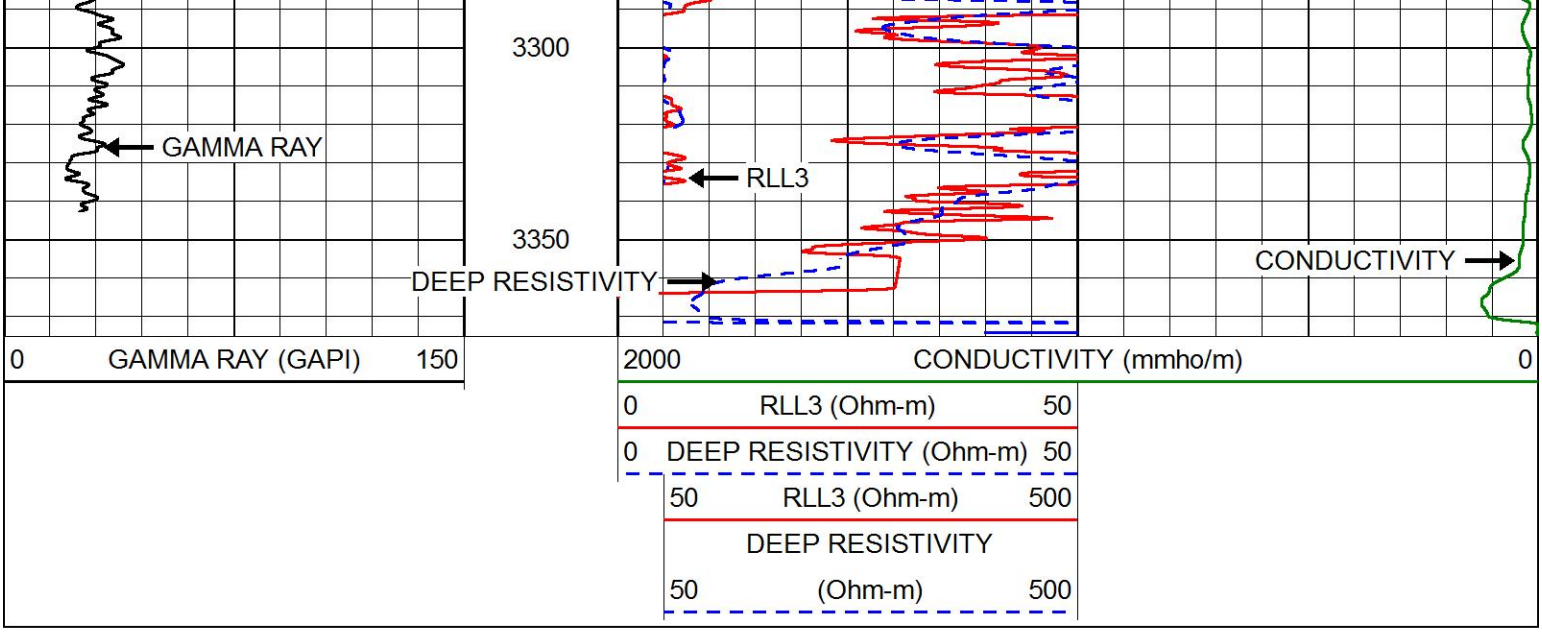
2350
2400
2450
2500
2550
2600
2650
2700


2750
2800
2850
2900
2950
3000
3050
3100
3150
3200
3250



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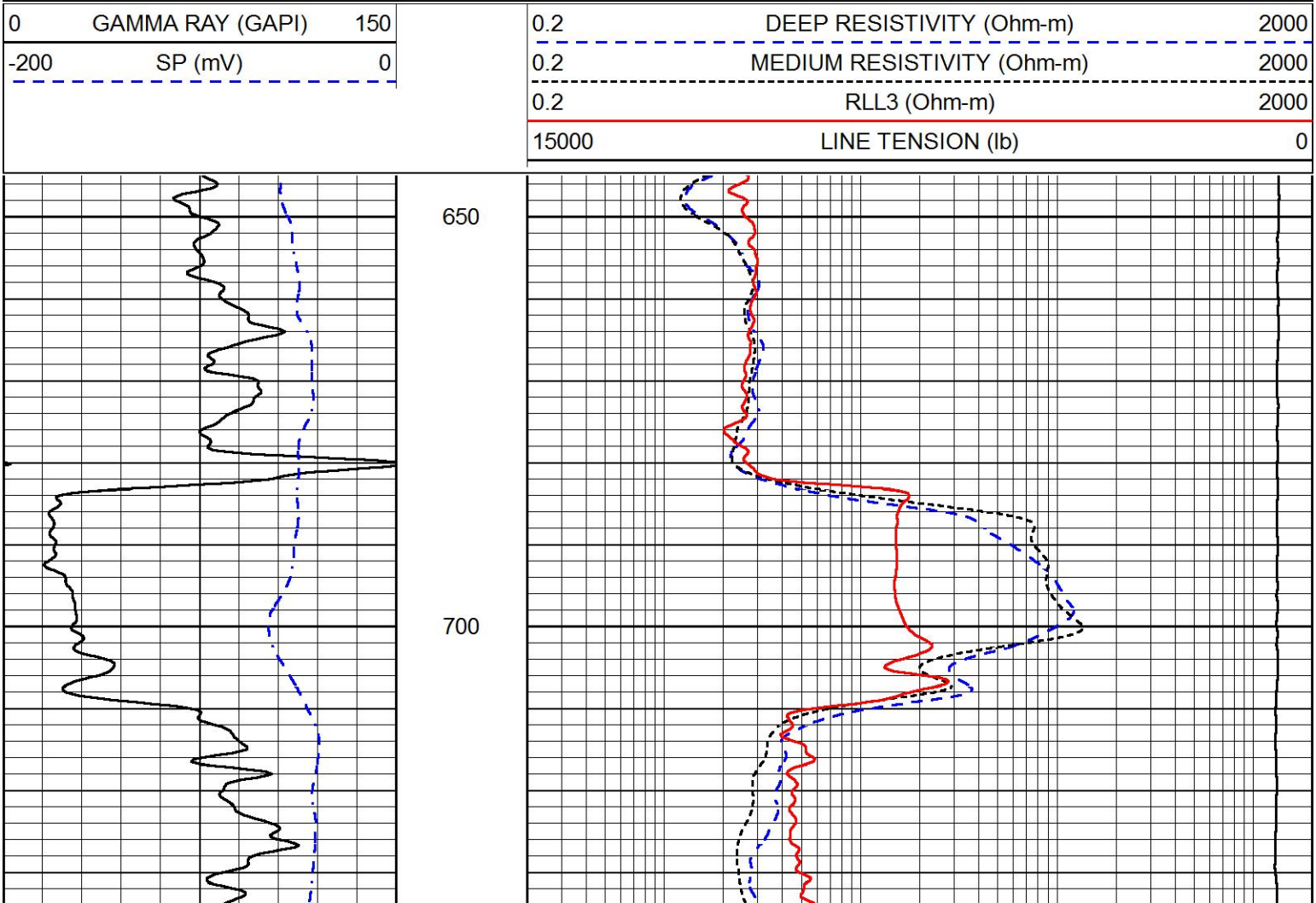
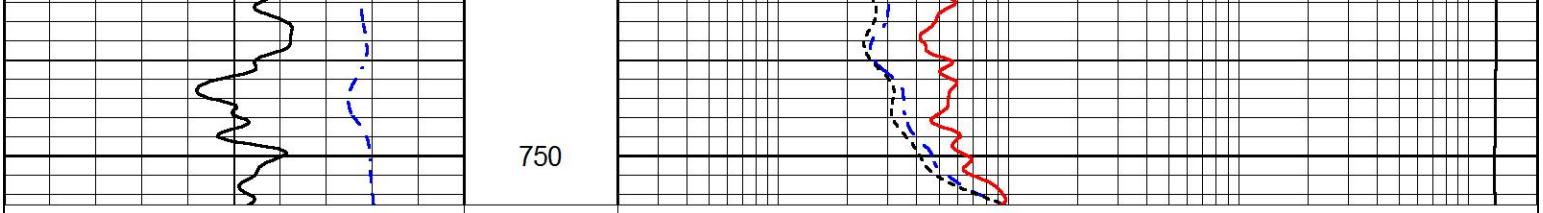
MAIN PASS

Database File	rjm_grossardt_3.db
Dataset Pathname	stack/pass3.1
Presentation Format	dil
Dataset Creation	Fri Sep 15 05:04:03 2017
Charted by	Depth in Feet scaled 1:240





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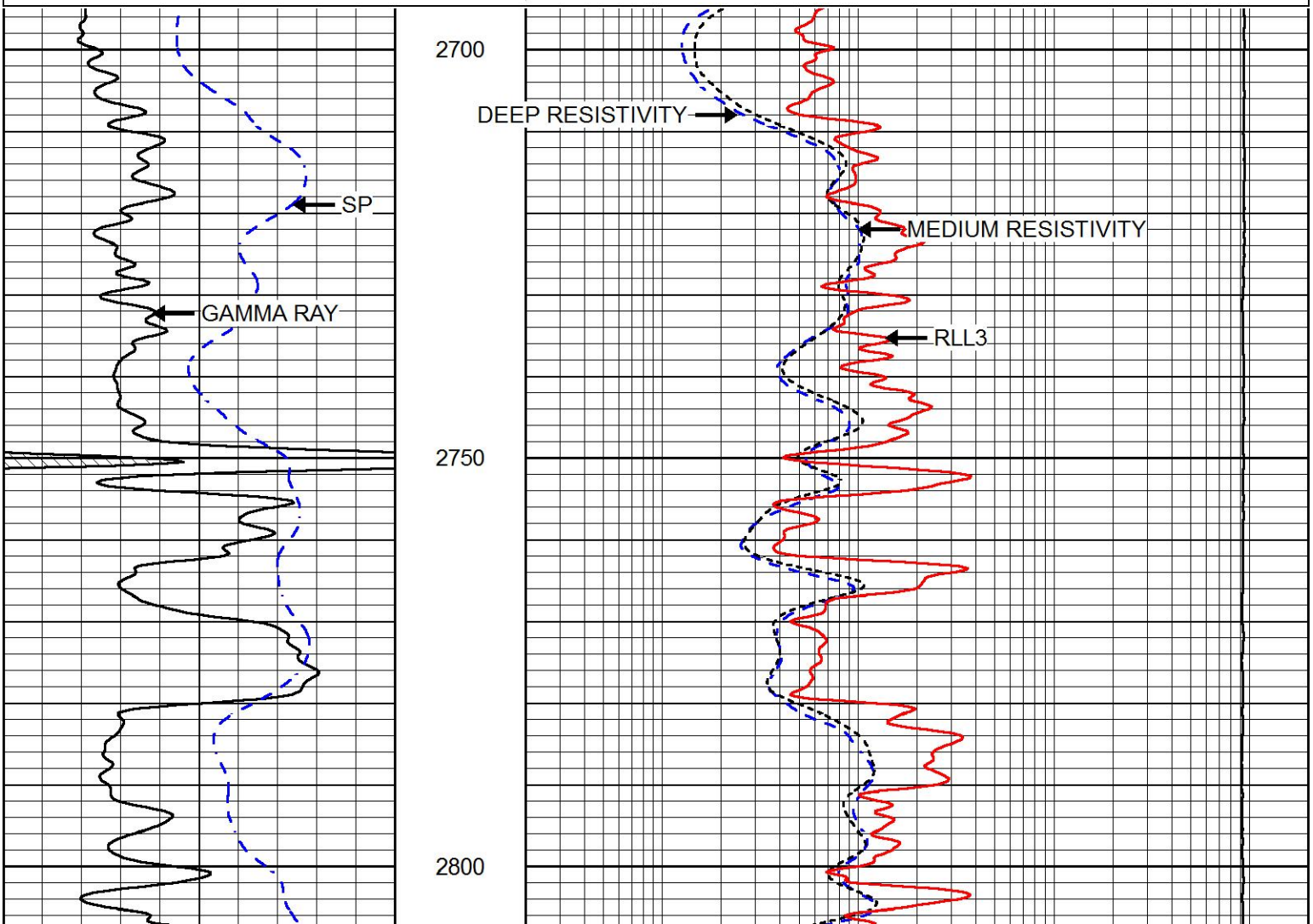
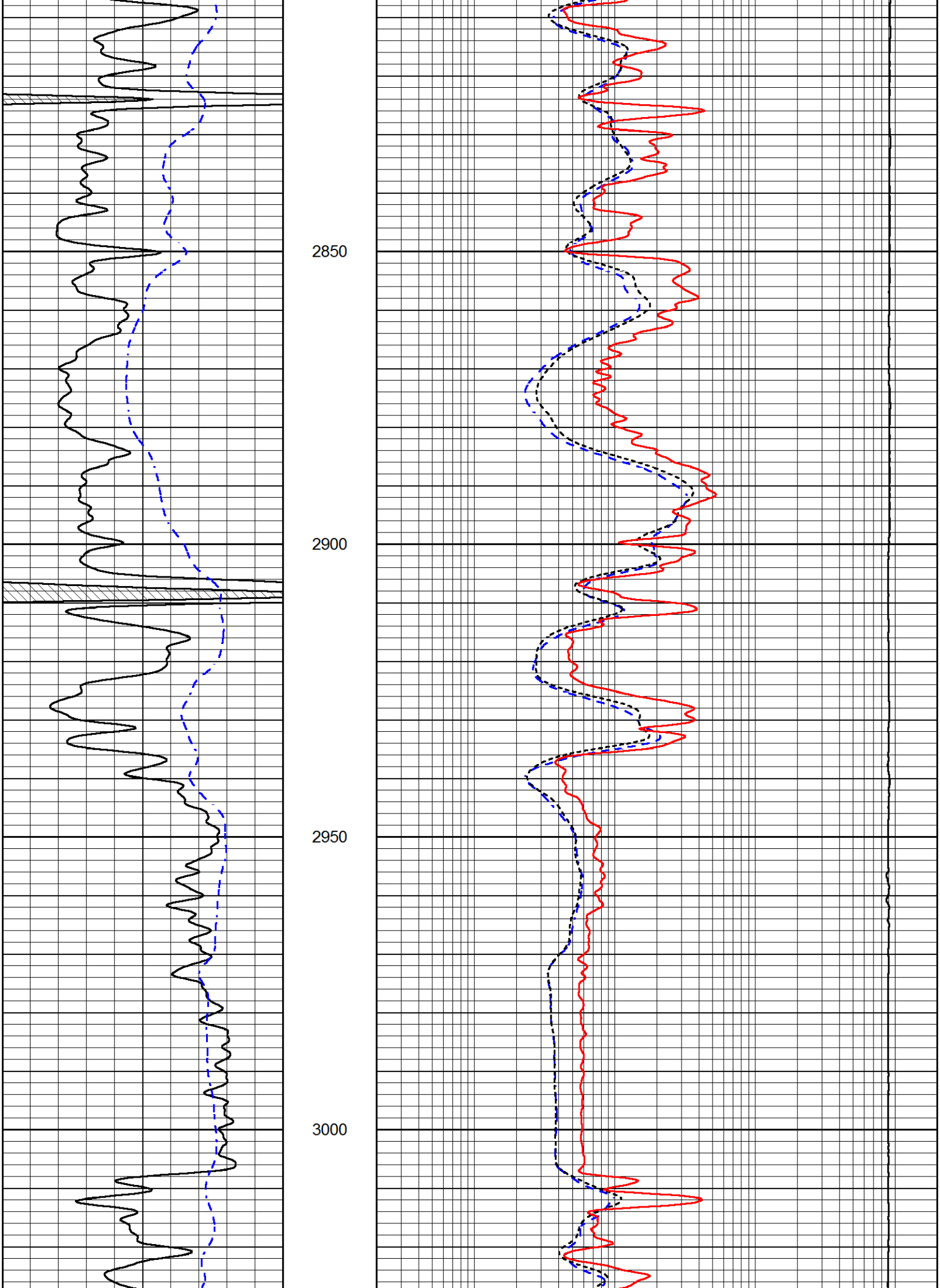
MAIN PASS

Database File	rjm_grossardt_3.db
Dataset Pathname	stack/pass3.1
Presentation Format	dil
Dataset Creation	Fri Sep 15 05:04:03 2017
Charted by	Depth in Feet scaled 1:240

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2900
2950
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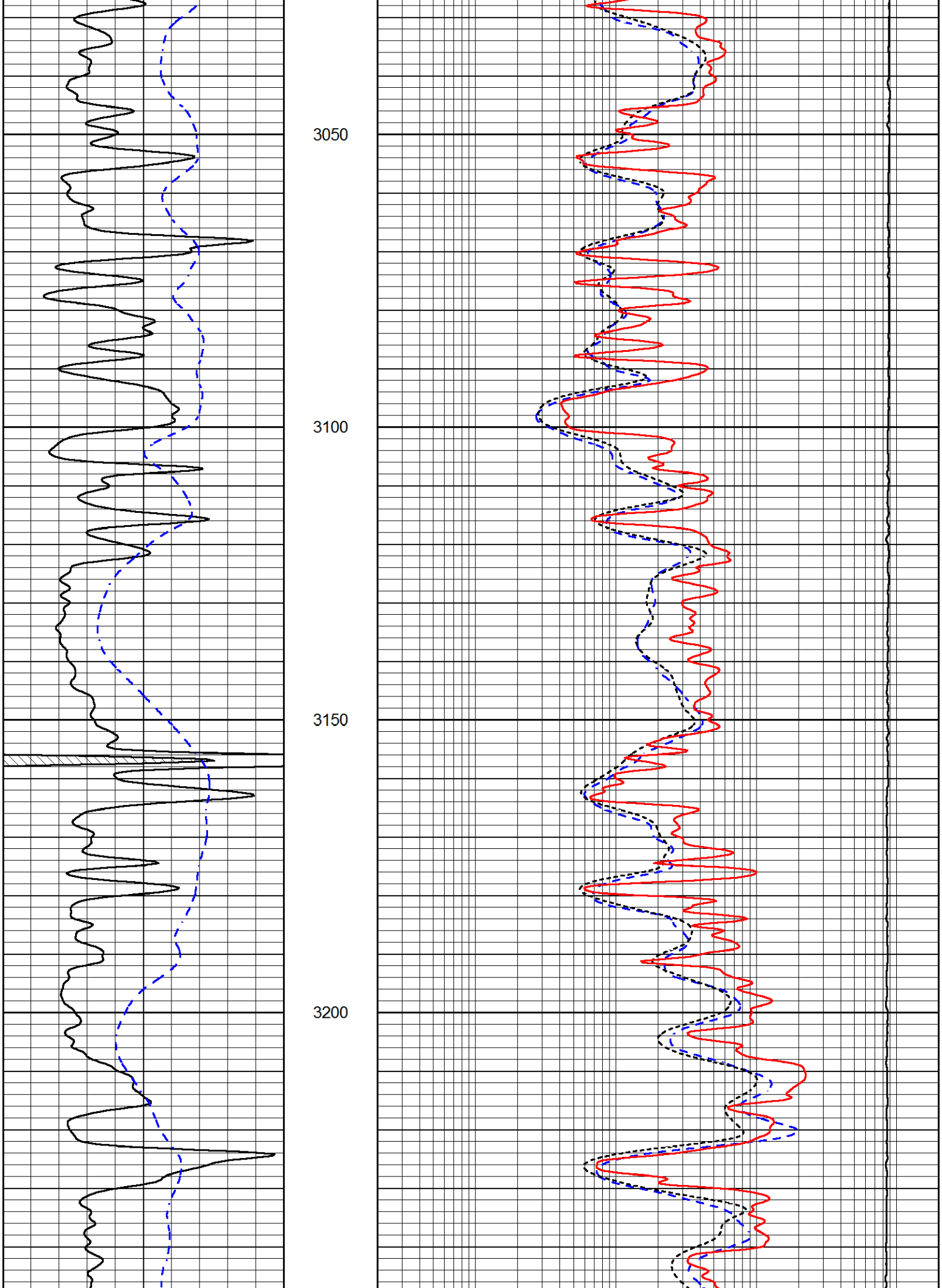
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3100
3150
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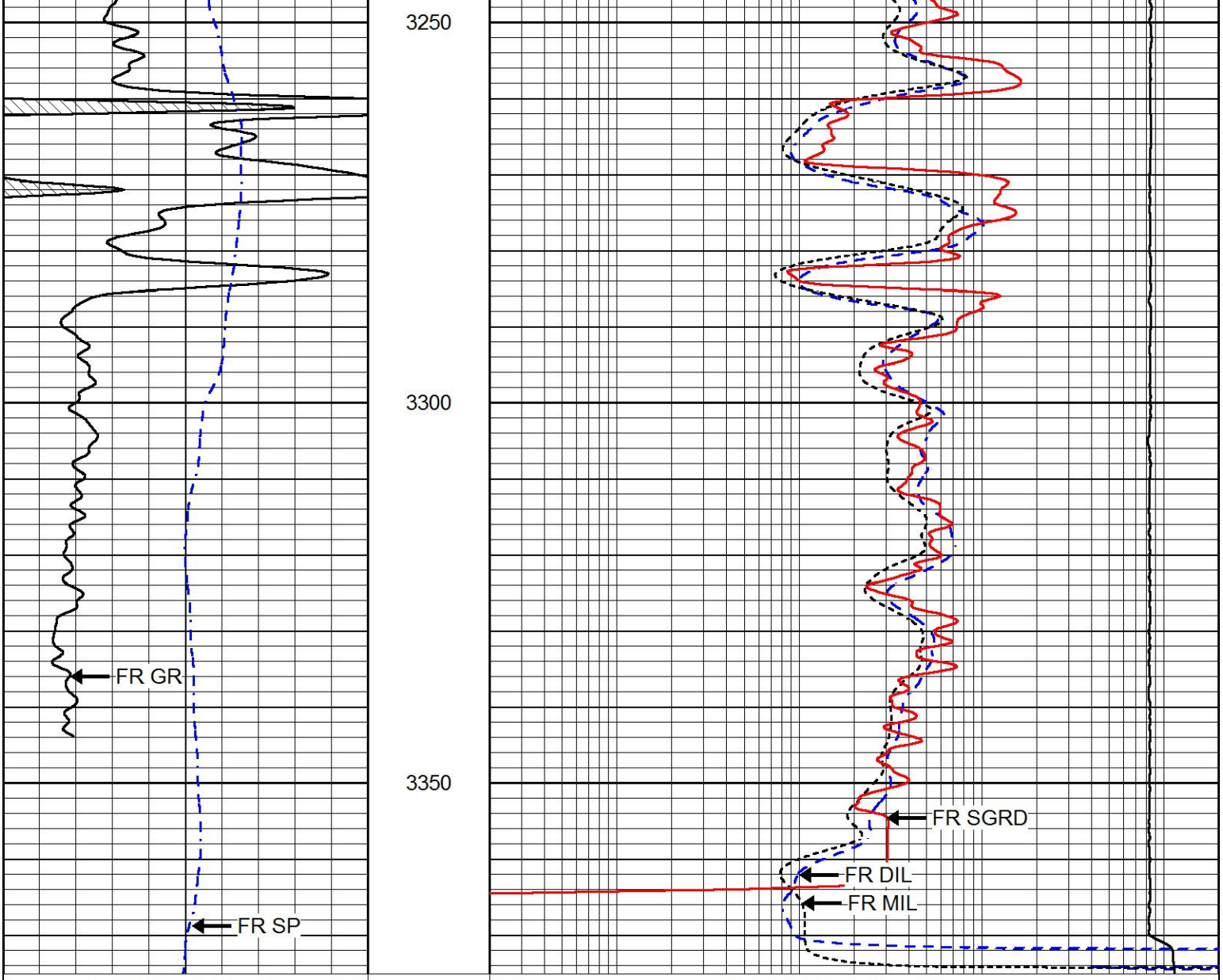

0	GAMMA RAY (GAPI)	150
-200	SP (mV)	0

0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
15000	LINE TENSION (lb)	0

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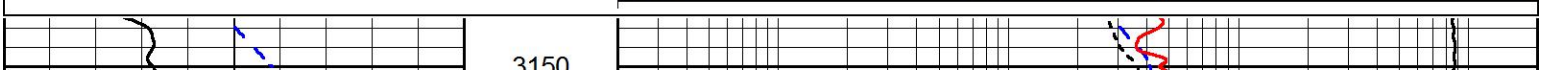
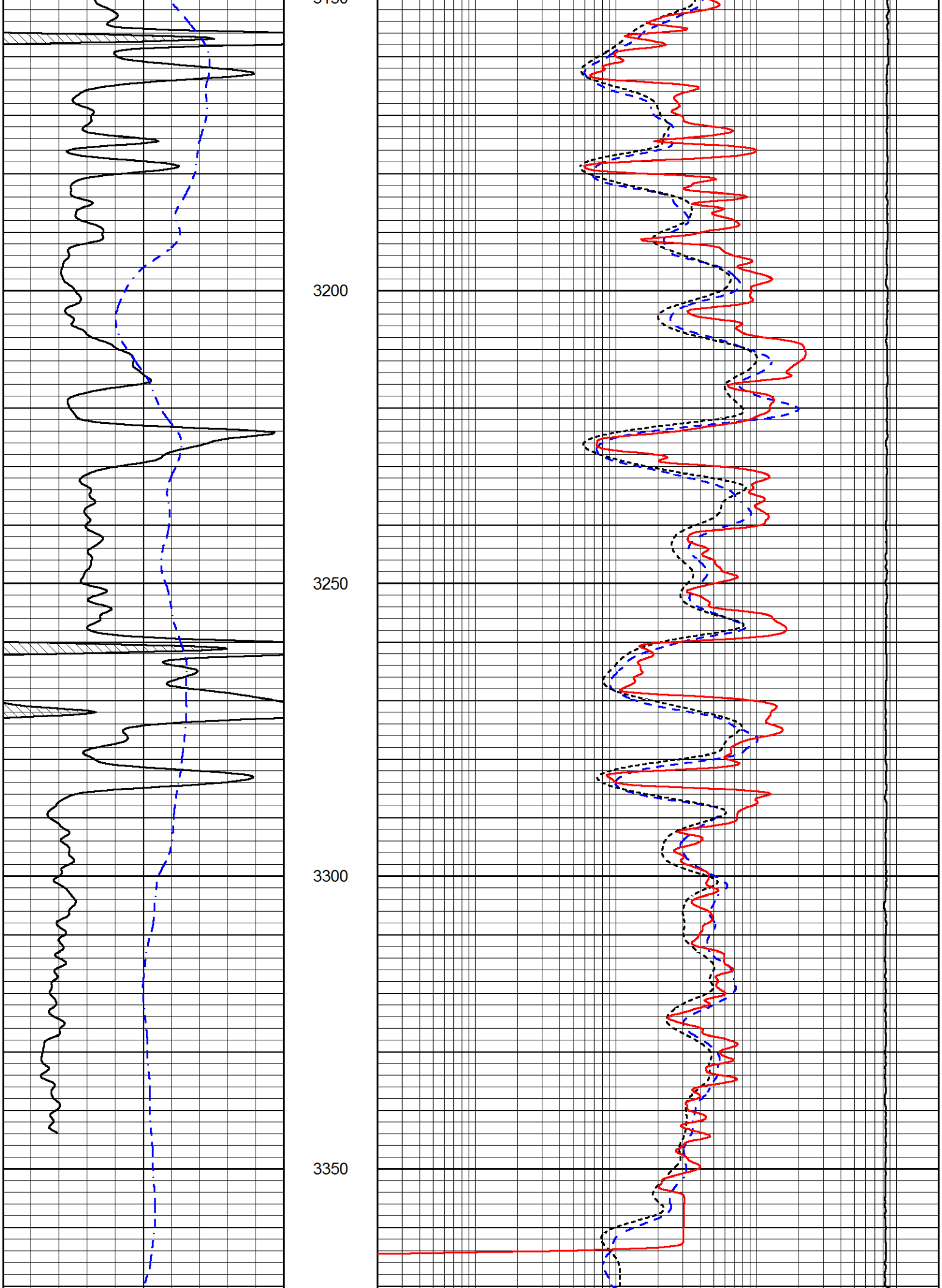
REPEAT SECTION

Database File	rjm_grossardt_3.db
Dataset Pathname	stack/pass2.1
Presentation Format	dil
Dataset Creation	Fri Sep 15 04:32:30 2017
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
15000	LINE TENSION (lb)	0

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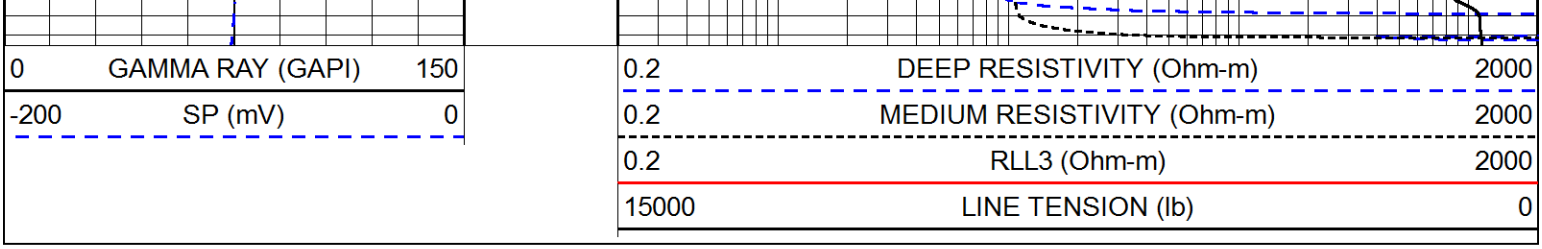
3250
3300
3350



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
15000	LINE TENSION (lb)	0

Calibration Report

Database File	rjm_grossardt_3.db
Dataset Pathname	stack/pass3.1
Dataset Creation	Fri Sep 15 05:04:03 2017

Dual Induction Calibration Report

Serial-Model:	1987-M&W
Calibration Performed:	Tue Apr 11 16:07:38 2017

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.530	-36.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-110.500

Compensated Density Calibration Report

Serial-Model:	168-986-M&W
Source / Verifier:	/
Master Calibration Performed:	Tue Apr 11 16:07:47 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.675	g/cc	859.57	3020.22	cps

Spine Angle = 74.61

Density/Spine Ratio = 0.523

	Size		Reading
Small Ring	4.00	in	1.03
Large Ring	14.00	in	1.23

Compensated Neutron Calibration Report

Serial Number:	tk10-MW
Tool Model:	M&W
Calibration Performed:	Wed Nov 16 11:21:36 2016

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:	89-M&W
Tool Model:	M&W

Calibration Performed:	Tue Apr 11 16:08:01 2017	
Calibrator Value:	1000.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	6.2	cps
Sensitivity:	0.5200	GAPI/cps

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Company	RJM COMPANY
Well	GROSSARDT NO. 3
Field	KRAFT-PRUSA
County	BARTON
State	KANSAS