KOLAR Document ID: 1460416

CORRECTION #1

Confidentiality Requested:
☑ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1
January 2018
Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 9152
Name: Marexco, Inc.
Address 1: PO BOX 21598
Address 2:
City: OKLAHOMA CITY State: OK Zip: 73156 + 1598
Contact Person: Stephen W. Marden
Phone: (405) 286-5657
CONTRACTOR: License # 34743
Name: White Knight Drilling LLC
Wellsite Geologist: Larry Nicholson
Purchaser: CHS

Designate Type of Completion:
☑ New Well ☐ Re-Entry ☐ Workover
☑ Oil ☐ WSW ☐ SWD
☐ Gas ☐ DH ☐ EOR
☐ OG ☐ GSW
☐ CM *(Coal Bed Methane)*
☐ Cathodic ☐ Other *(Core, Expl., etc.)*:

If Workover/Re-entry: Old Well Info as follows:
Operator:
Well Name:
Original Comp. Date: Original Total Depth:
☐ Deepening ☐ Re-perf. ☐ Conv. to EOR ☐ Conv. to SWD
☐ Plug Back ☐ Liner ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ EOR Permit #:
☐ GSW Permit #:

12/30/2018 Spud Date or Recompletion Date
01/10/2019 Date Reached TD
04/05/2019 Completion Date or Recompletion Date

API No.: 15-063-22343-00-00
Spot Description: E/2 SW NE
__ - E2 - SW - NE Sec. 28 Twp. 14 S. R. 29 ☐ East ☑ West
2004 Feet from ☑ North / ☐ South Line of Section
1603 Feet from ☑ East / ☐ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☑ NE ☐ NW ☐ SE ☐ SW
GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Gove
Lease Name: LUNDGREN Well #: 32-28
Field Name: Lundgren East
Producing Formation: 4Cherokee Lm., Lansing
Elevation: Ground: 2606 Kelly Bushing: 2611
Total Vertical Depth: 4350 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 261 Feet
Multiple Stage Cementing Collar Used? ☑ Yes ☐ No
If yes, show depth set: 2050 Feet
If Alternate II completion, cement circulated from: 2050
feet depth to: 0 w/ 175 sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)
Chloride content: 1500 ppm Fluid volume: 500 bbls
Dewatering method used: Evaporated
Location of fluid disposal if hauled offsite:
Operator Name:
Lease Name: License #:
Quarter Sec. Twp. S. R. ☐ East ☐ West
County: Permit #:

AFFIDAVIT
I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY
☑ **Confidentiality Requested**
Date: 05/08/2019
☐ **Confidential Release Date:**
☑ **Wireline Log Received** ☑ **Drill Stem Tests Received**
☑ **Geologist Report / Mud Logs Received**
☐ **UIC Distribution**
ALT ☐ I ☑ II ☐ III **Approved by:** Karen Ritter **Date:** 05/17/2019

CORRECTION #1

Page Two

KOLAR Document ID: 1460416

Operator Name: Marexco, Inc. Lease Name: LUNDGREN Well #: 32-28

Sec. 28 Twp. 14 S. R. 29 ☐ East ☑ West County: Gove

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken *(Attach Additional Sheets)*	☑ Yes	☐ No
Samples Sent to Geological Survey	☑ Yes	☐ No
Cores Taken	☐ Yes	☑ No
Electric Log Run	☑ Yes	☐ No
Geologist Report / Mud Logs	☑ Yes	☐ No

List All E. Logs Run:
Attached

☐ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
Anhydrite	2033	578
Heebner Sh	3642	-1031
Lansing	3675	-1064
Mississippian	4287	-1676

CASING RECORD ☑ New ☐ Used

Report all strings set-conductor, surface, intermediate, production, etc.

Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12.25	8.625	23	261	60/40 poz	200	3% cacl, 2% gel
Production	7.875	5.5	15.5	4346	standard	200	calseal, flocele
Production							

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
☐ Perforate ☑ Protect Casing ☐ Plug Back TD ☑ Plug Off Zone	3910-3914	standard	50	halad, 3#
	2050-2050	standard	175	flocele

1. Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☑ No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? ☐ Yes ☐ No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/ Injection: 04/05/2019

Producing Method: ☐ Flowing ☑ Pumping ☐ Gas Lift ☐ Other *(Explain)*

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
	45		10		

DISPOSITION OF GAS: ☐ Vented ☐ Sold ☐ Used on Lease *(If vented, Submit ACO-18.)*

METHOD OF COMPLETION: ☐ Open Hole ☑ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☑ Commingled *(Submit ACO-4)*

PRODUCTION INTERVAL:

Top	Bottom
4216	4218
3708	3714

Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record *(Amount and Kind of Material Used)*
4	4236	4240			250 gal. 15% MCA
4	4216	4218			250 gal. 15% MCA
4	3910	3914			250 gal. 15% MCA
4	3708	3714			500 gal. 15% MCA

TUBING RECORD: Size: Set At: Packer At:

Mail to: KCC - Conservation Division, 266 N. Main, Suite 220, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Marexco, Inc.
Well Name	LUNDGREN 32-28
Doc ID	1460416

All Electric Logs Run

Borehole compensated Sonic
Compensated Neutron/Density
Micro Log
Dual Induction
Radial Bond Log

Form	ACO1 - Well Completion
Operator	Marexco, Inc.
Well Name	LUNDGREN 32-28
Doc ID	1460416

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	12.25	8.625	23	261	60/40 poz	200	3% cacl, 2% gel
Production	7.875	5.5	15.5	4346	standard	200	calseal, flocele
Production							

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Pioneer Energy Services

DUAL INDUCTION LOG

Company MAREXCO, INC
Well LUNDGREN NO.32-28
Field LUNDGREN EAST
County GOVE State KANSAS

Company MAREXCO, INC
Well LUNDGREN NO.32-28
Field LUNDGREN EAST
County GOVE State KANSAS

Location: API # : 15-063-22343-00-00
2004' FNL & 1503' FEL
SEC 28 TWP 14S RGE 29W

Other Services
CNL/CDL
MEL/SON

Permanent Datum GROUND LEVEL Elevation 2606'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2611'
D.F. N/A
G.L. 2606'

Date	1/10/2019		
Run Number	ONE		
Depth Driller	4350'		
Depth Logger	4350'		
Bottom Logged Interval	4349'		
Top Log Interval	250'		
Casing Driller	8.625" @ 261'		
Casing Logger	263'		
Bit Size	7.875"		
Type Fluid in Hole	CHEMICAL		
Salinity,ppm CL	4000		
Density / Viscosity	9.2 61		
pH / Fluid Loss	10.7 9.2		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.75 @ 64		
Rmf @ Meas. Temp	.56 @ 64		
Rmc @ Meas. Temp	1.01 @ 64		
Source of Rmf / Rmc	CHARTS		
Rm @ BHT	.40 @ 120		
Operating Rig Time	4 HOURS		
Max Rec. Temp. F	120 DEG. F.		
Equipment Number	108		
Location	HAYS		
Recorded By	M. HISS	J. HENRICKSON	
Witnessed By	LARRY NICHOLSON		

<<< Fold Here >>>

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

GOVE KANSAS
10 MILES SOUTH TO GOVE RD1
2 MILES WEST, SOUTH INTO

Log Measured From: KELLY BUSHING 5 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: M. HISS	Primary Witness: LARRY NICHOLSON
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\marexco_lundgren_32_28.db
Dataset field/well/run1/pass4.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	120	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	75	30	Off	4350

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 (934-5002)	8.50	4.00	250.00
LSD	20.85					
DCAL	20.83					
SSD	20.35					
RLL3	15.80					
RLL3F	15.79					
			DIL-M&W (PSI 988)	18.50	3.50	220.00
CILD	8.00					

CILM	4.70	
SP	0.20	

Dataset: marexco_lundgren_32_28.db: field/well/run1/pass4.1
Total length: 35.50 ft
Total weight: 620.00 lb
O.D.: 4.00 in

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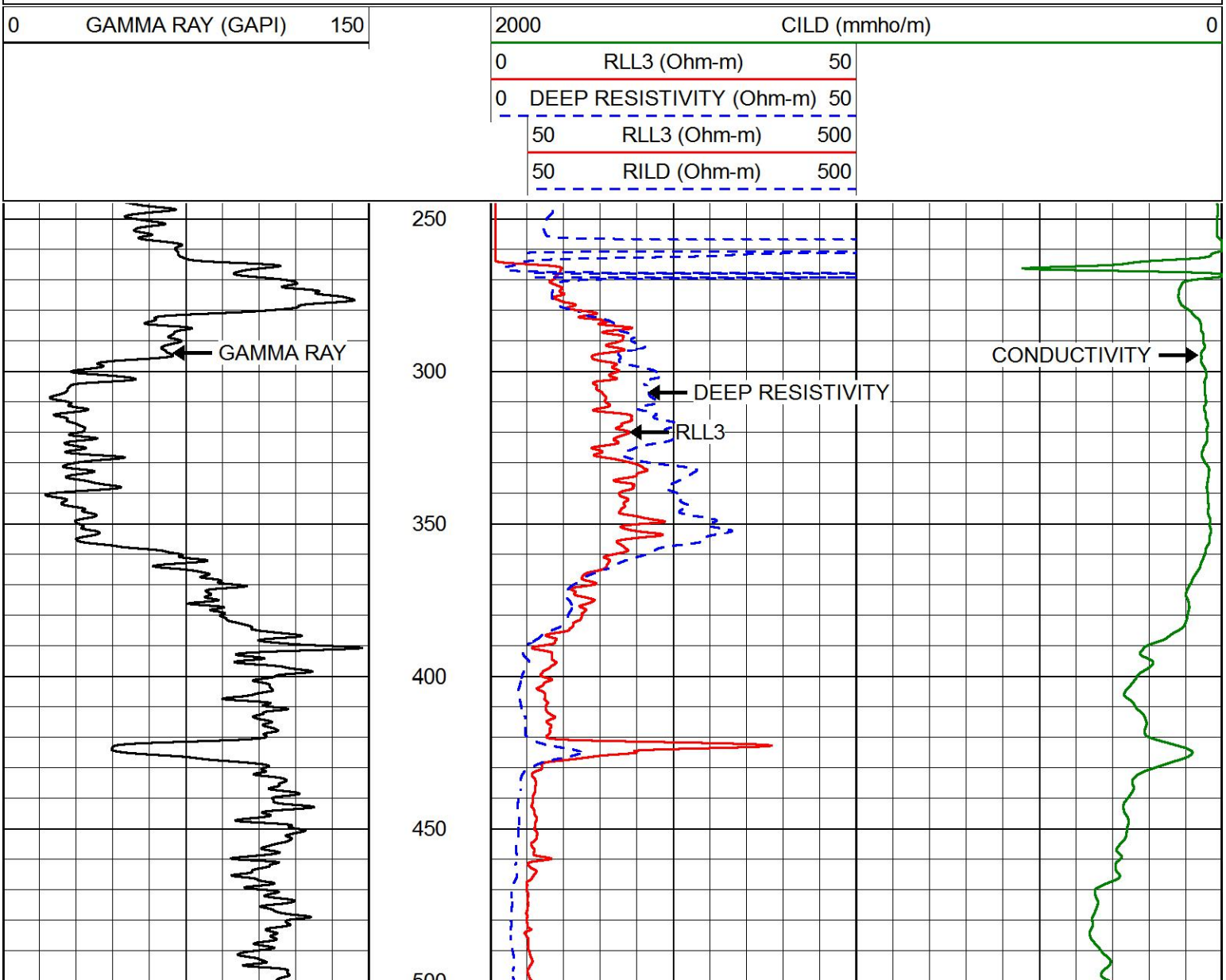
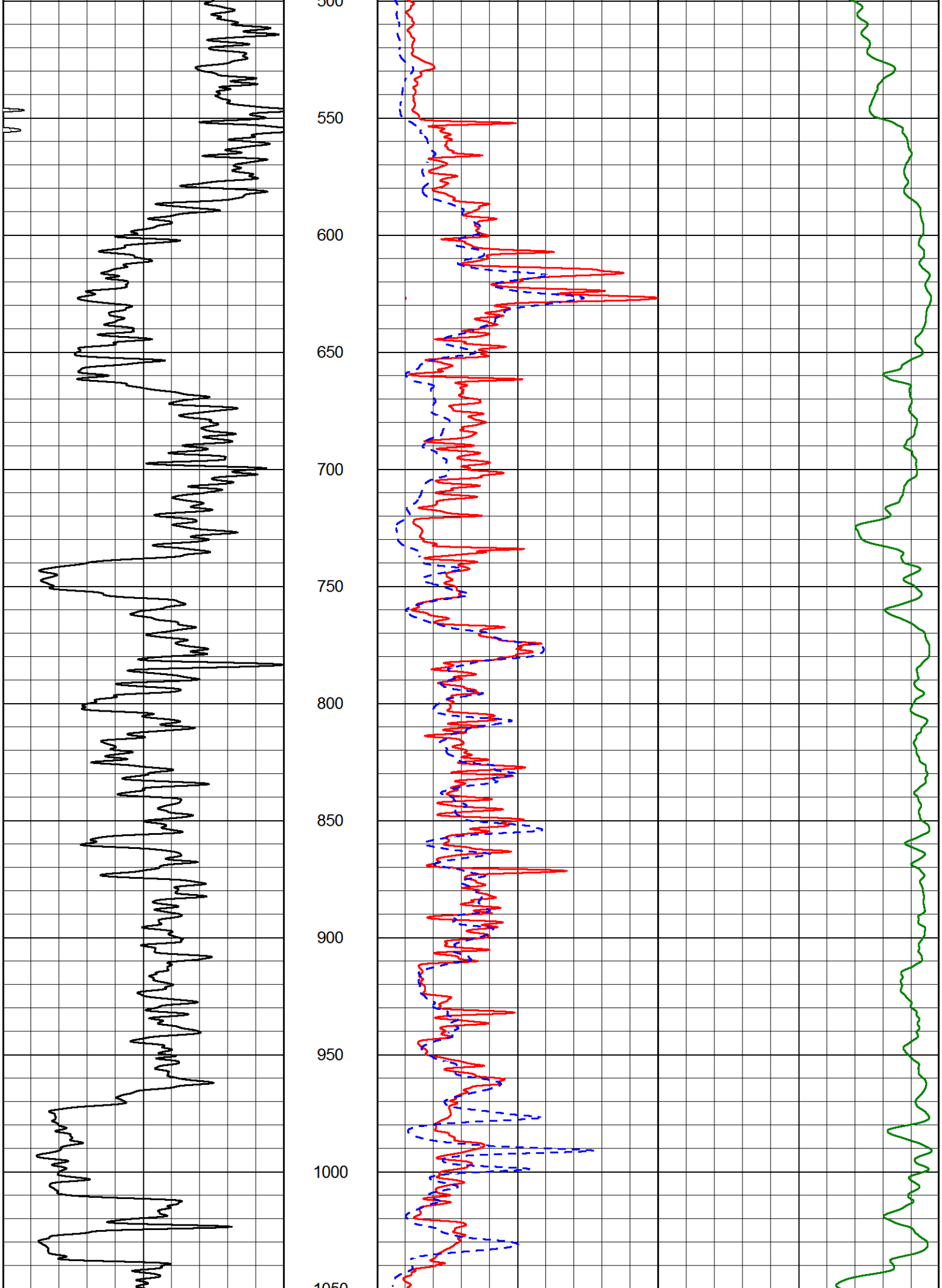
Pioneer Energy Services

MAIN PASS

Database File	marexco_lundgren_32_28.db
Dataset Pathname	pass4.1
Presentation Format	dil2in
Dataset Creation	Thu Jan 10 06:40:50 2019
Charted by	Depth in Feet scaled 1:600

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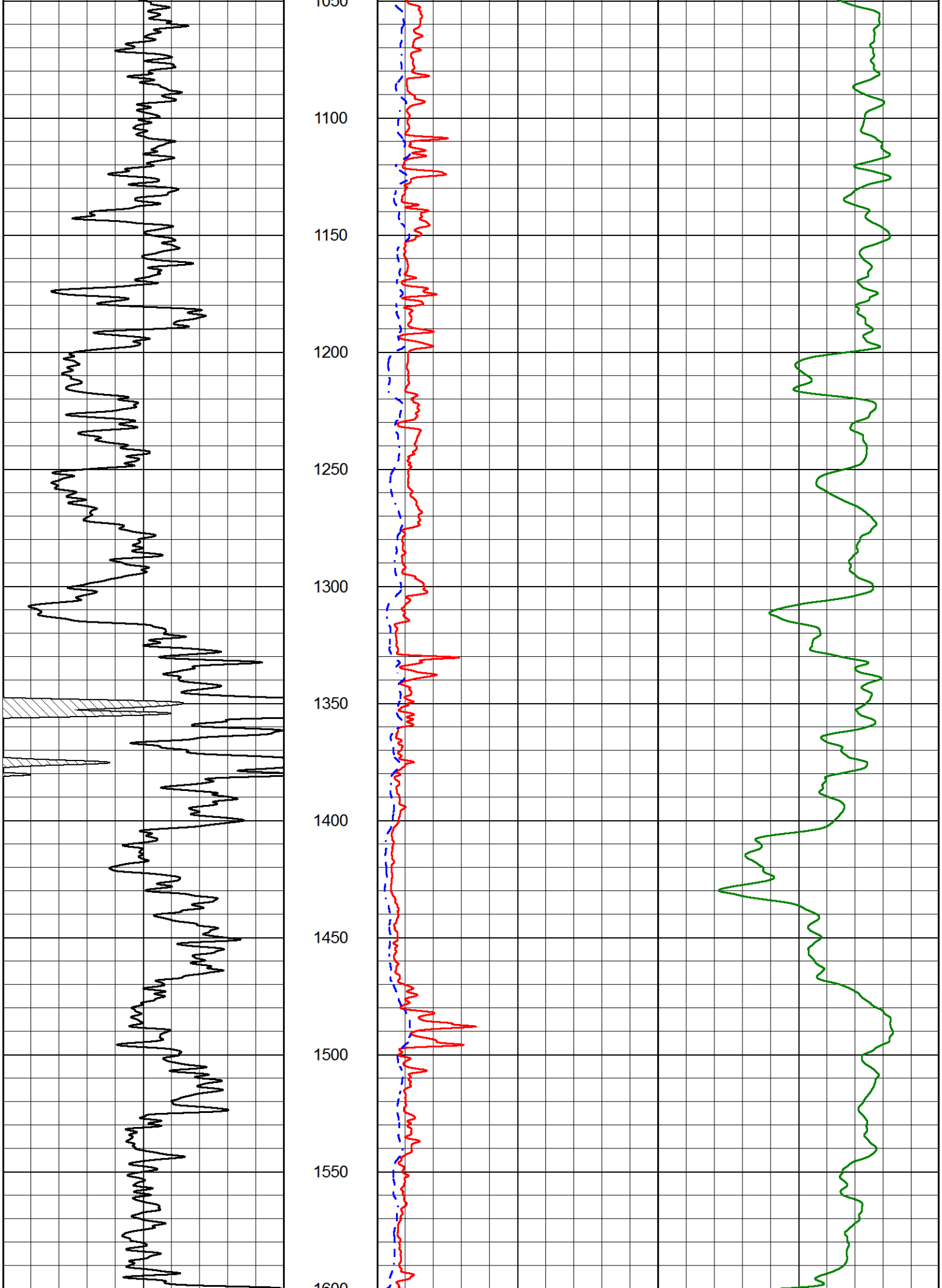
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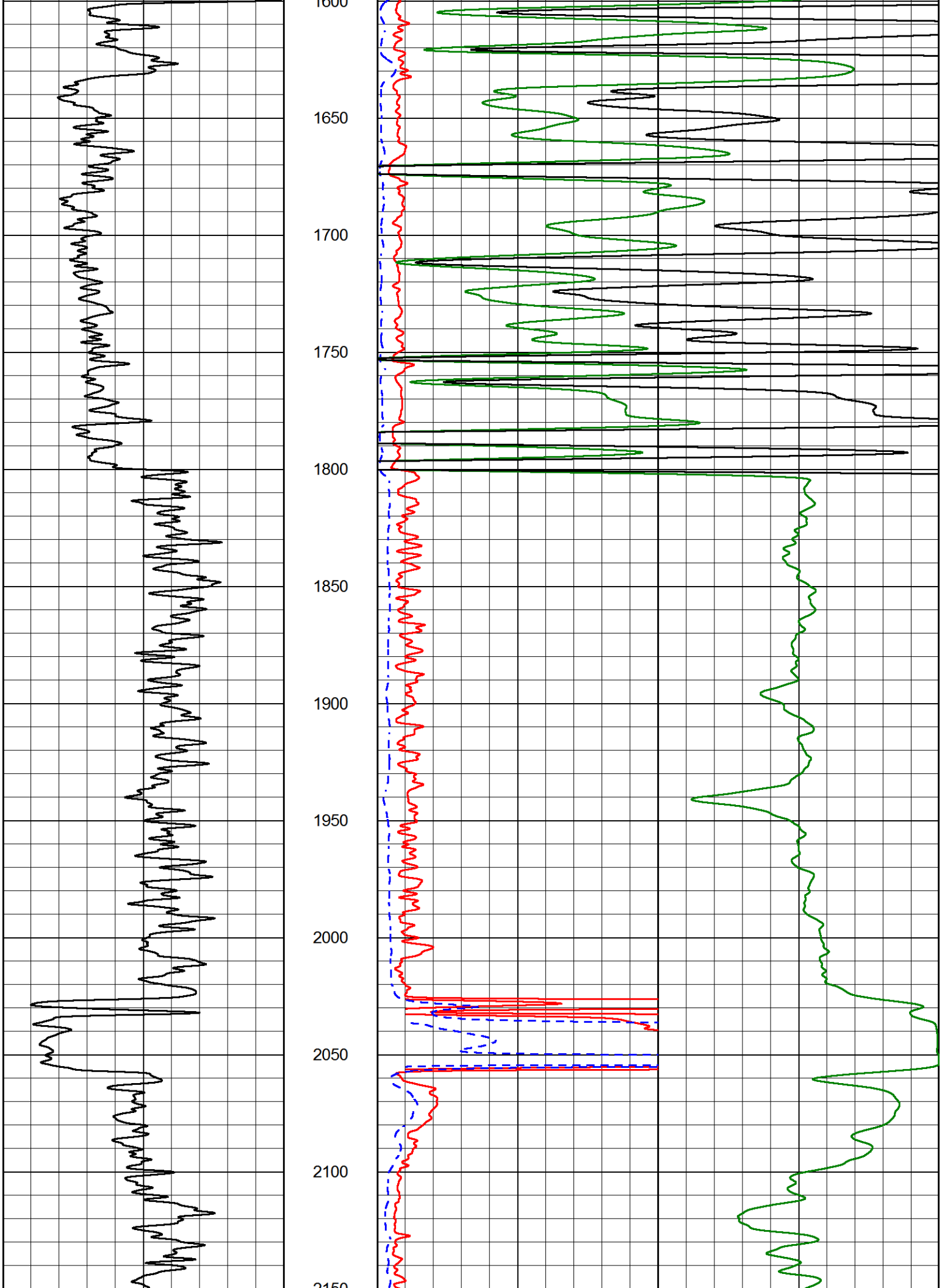
1500
1550
1600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1800
1850
1900
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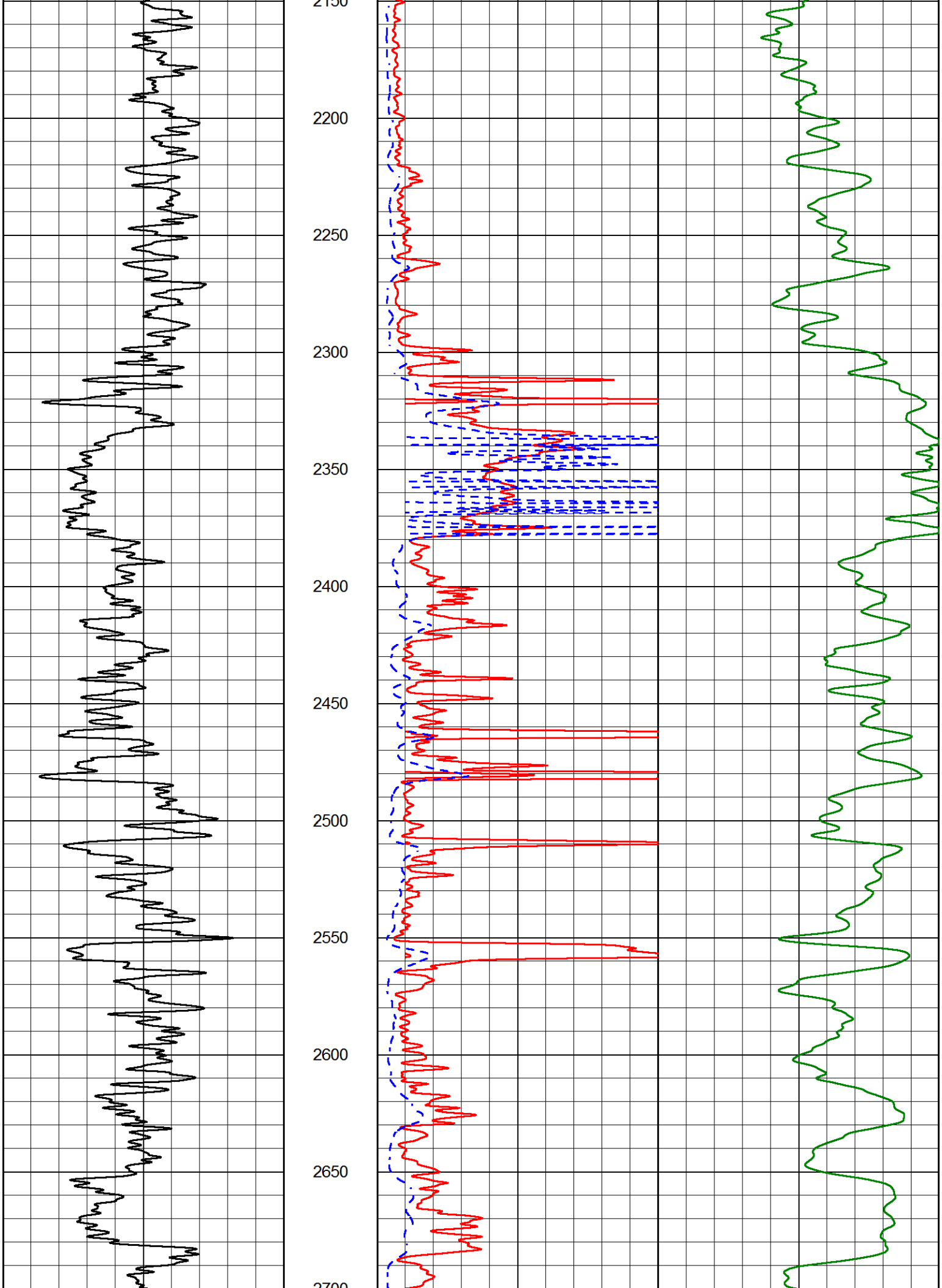
2050
2100
2150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2300
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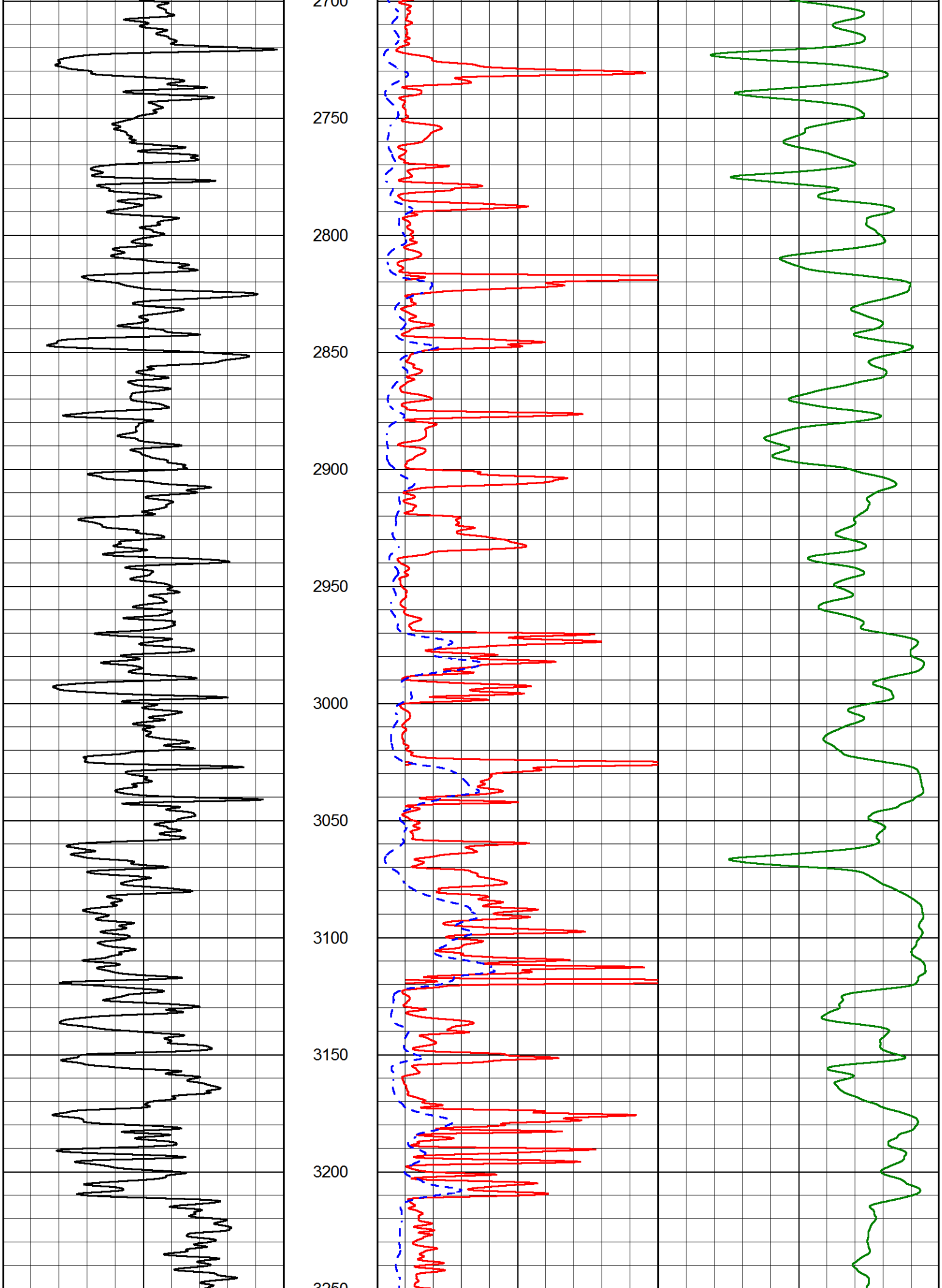
2400
2450
2500
2550
2600
2650
2700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2950
3000
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3150
3200
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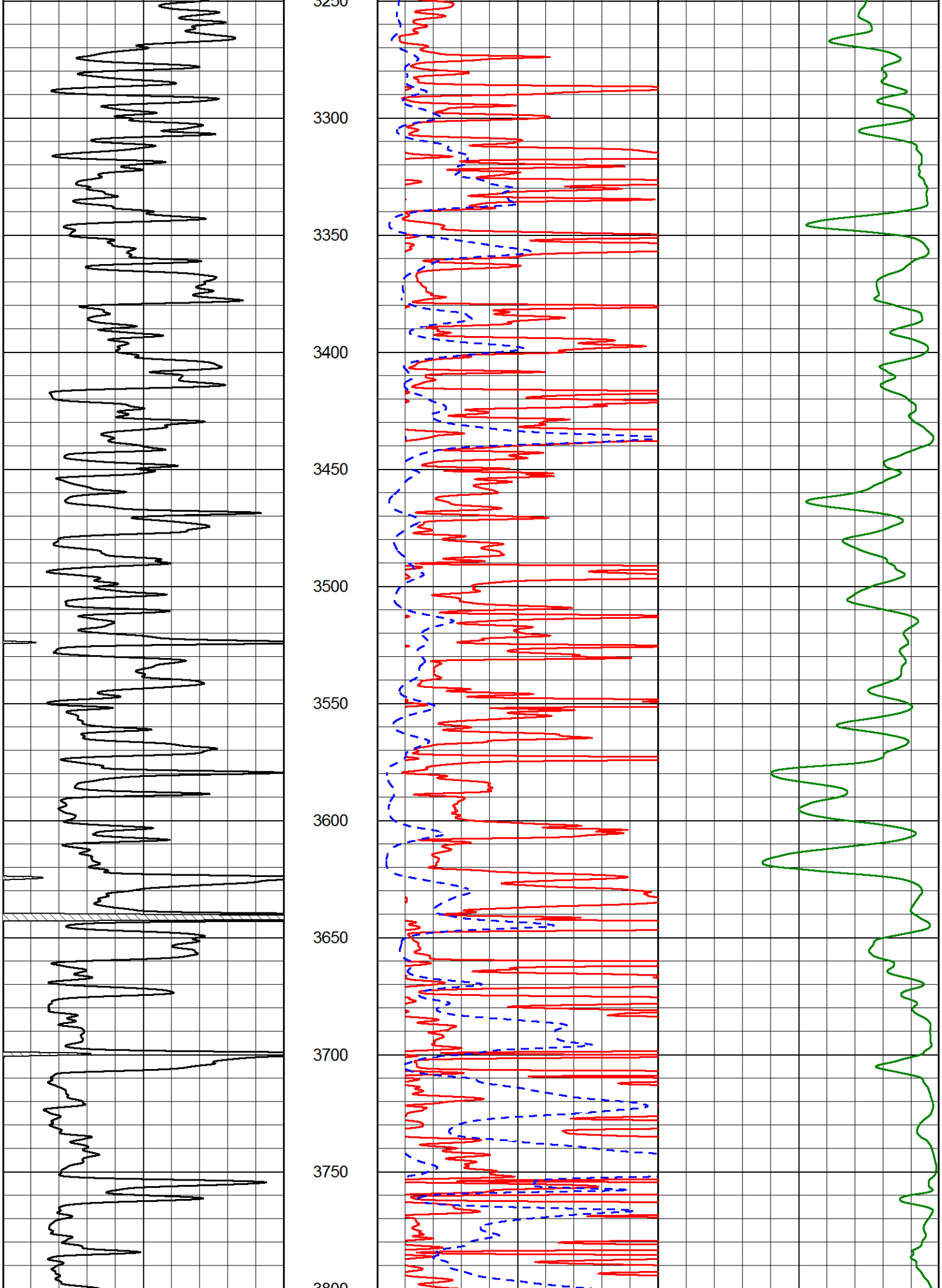
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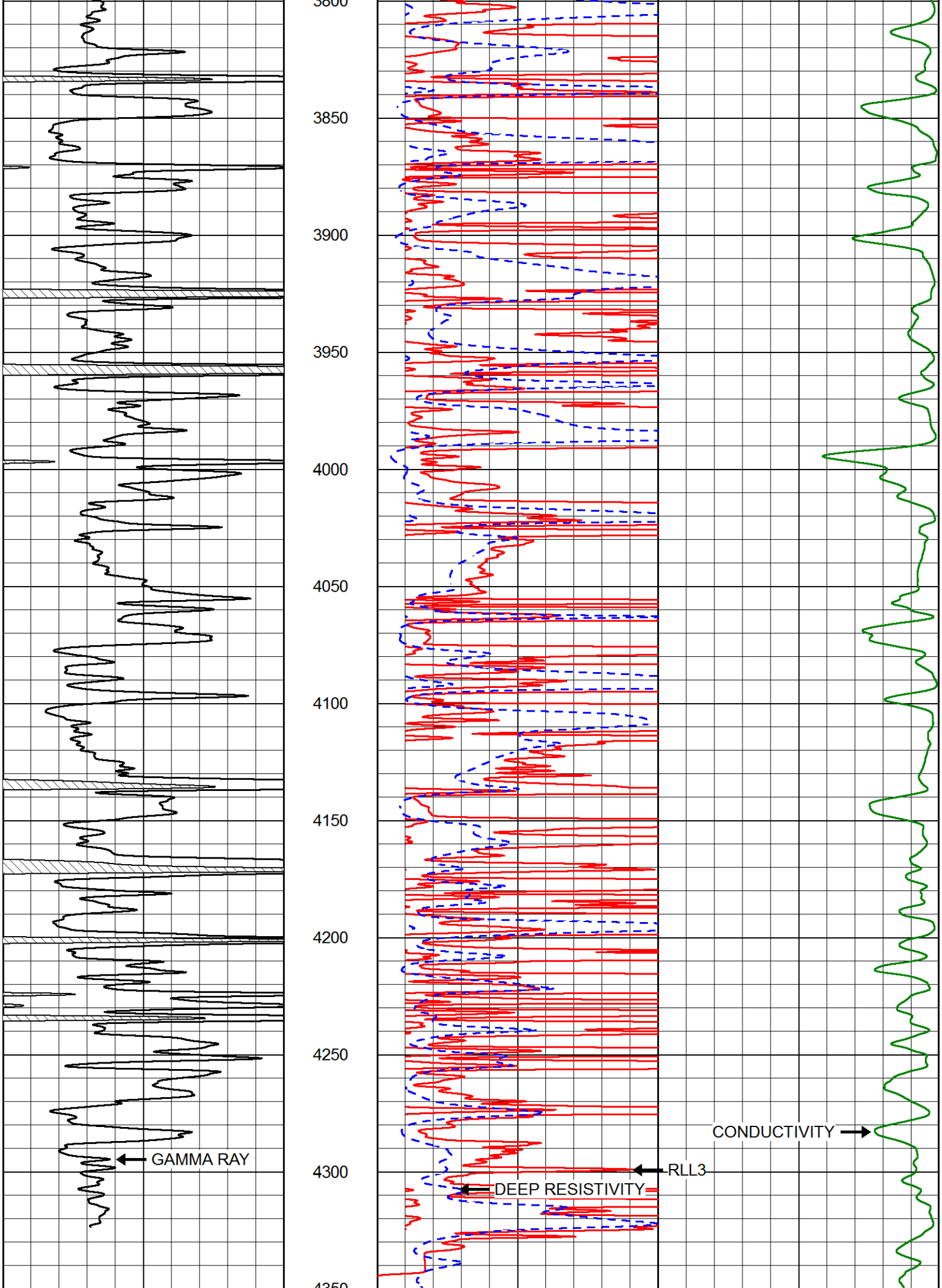
3750
3800


3800
3850
3900
3950
4000
4050
4100
4150
4200
4250
4300
4350
GAMMA RAY
CONDUCTIVITY
RLL3
DEEP RESISTIVITY

4350

0	GAMMA RAY (GAPI)	150
2000	CILD (mmho/m)	0
0	RLL3 (Ohm-m)	50
0	DEEP RESISTIVITY (Ohm-m)	50
50	RLL3 (Ohm-m)	500
50	RILD (Ohm-m)	500

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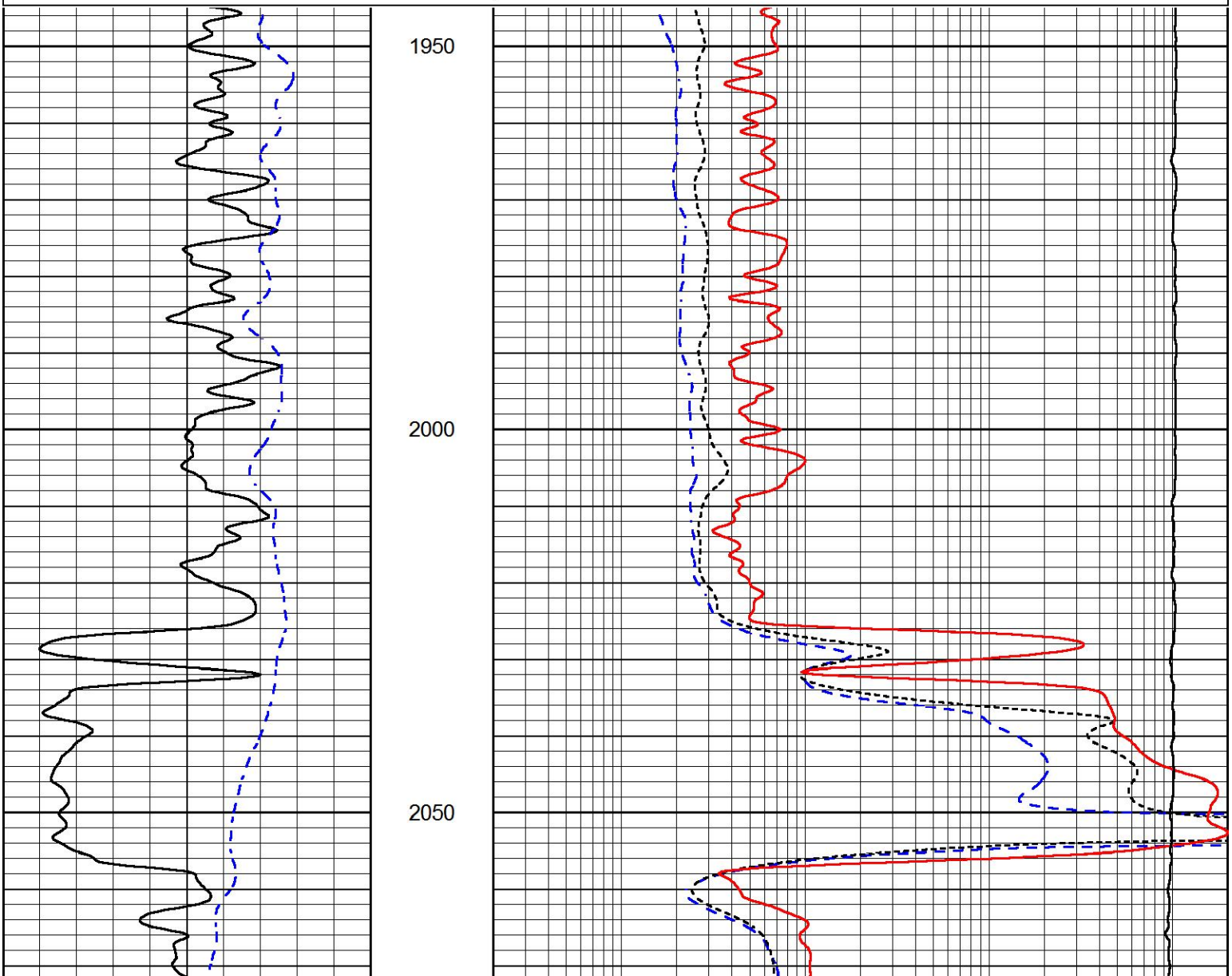
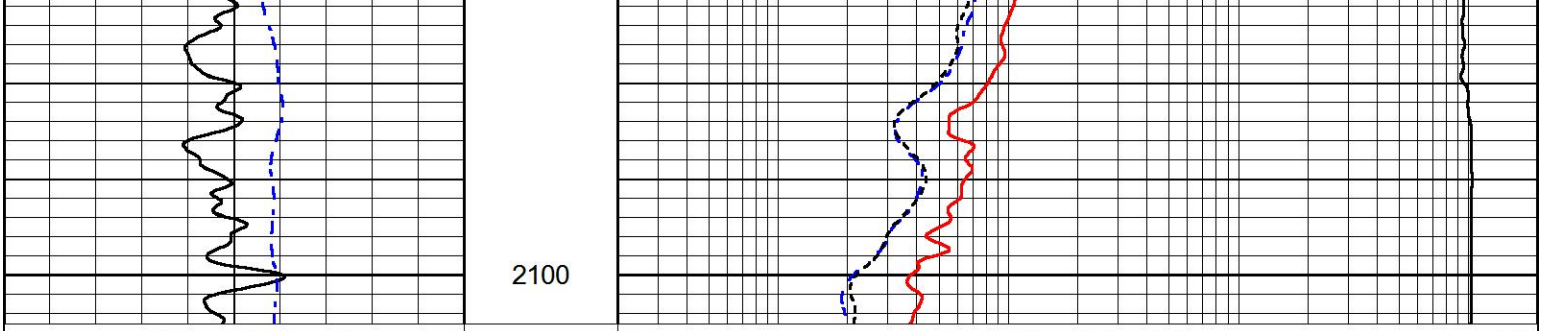
MAIN PASS

Database File	marexco_lundgren_32_28.db
Dataset Pathname	pass4.1
Presentation Format	dil
Dataset Creation	Thu Jan 10 06:40:50 2019
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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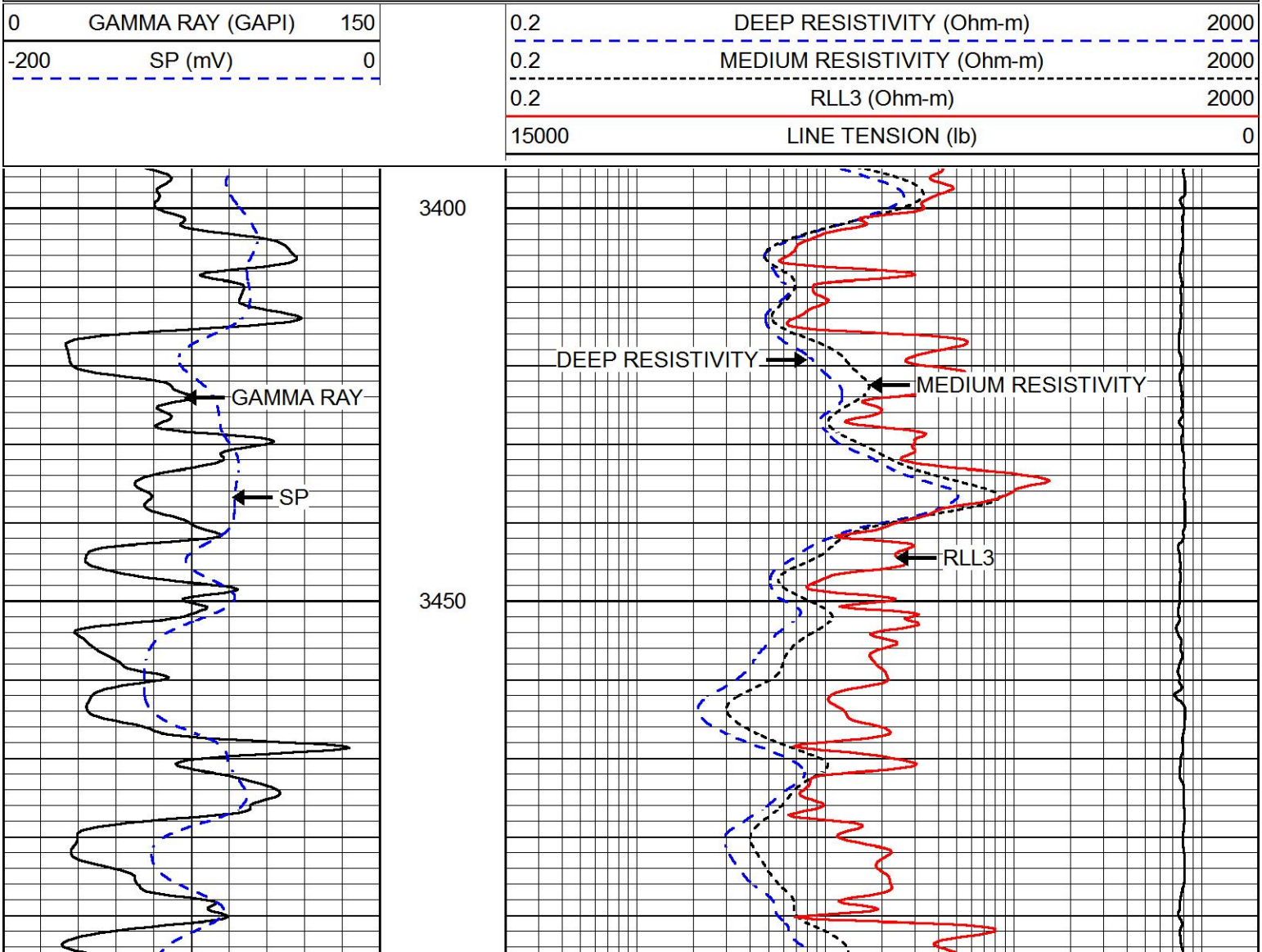
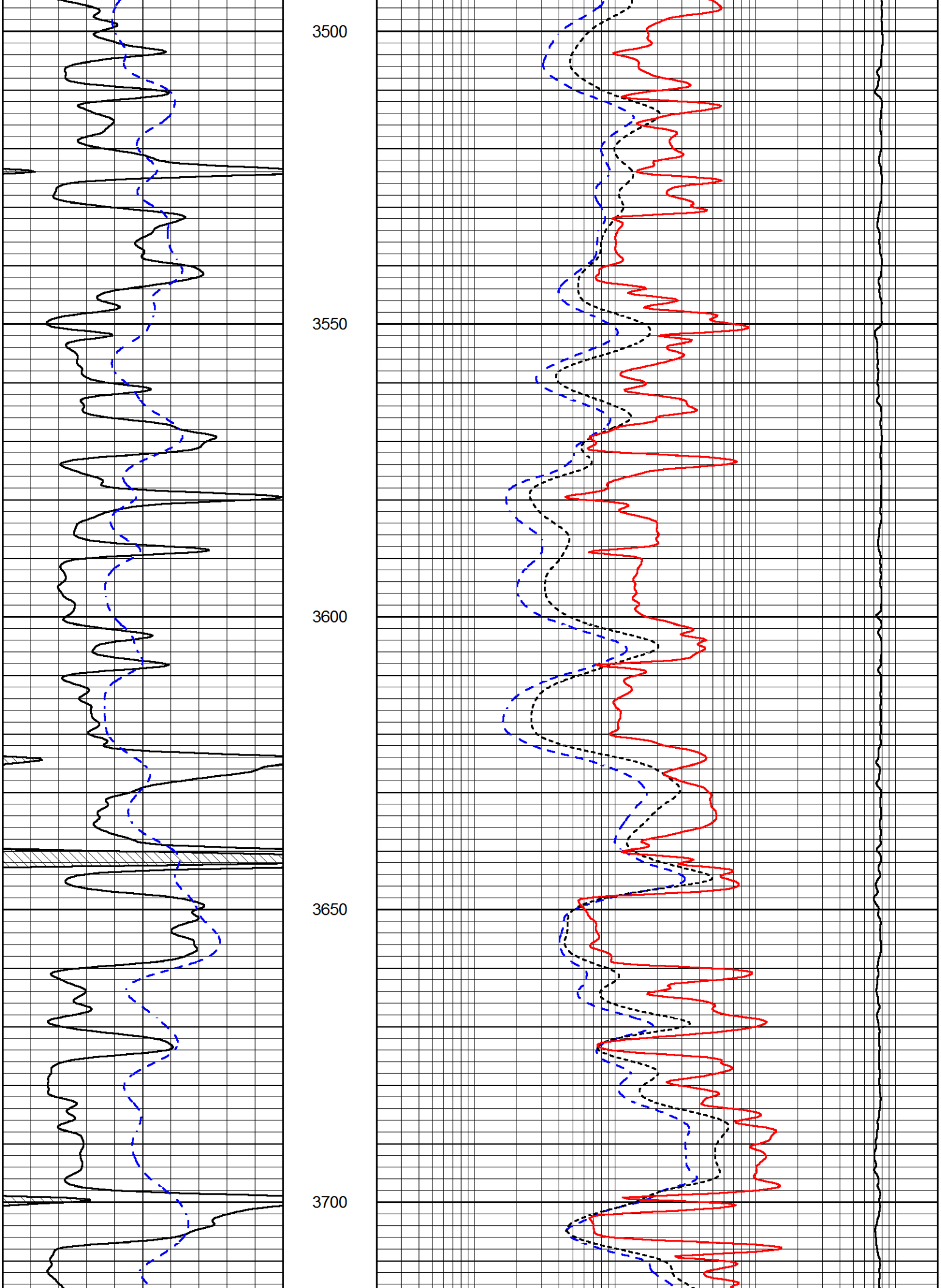
MAIN PASS

Database File	marexco_lundgren_32_28.db
Dataset Pathname	pass4.1
Presentation Format	dil
Dataset Creation	Thu Jan 10 06:40:50 2019
Charted by	Depth in Feet scaled 1:240

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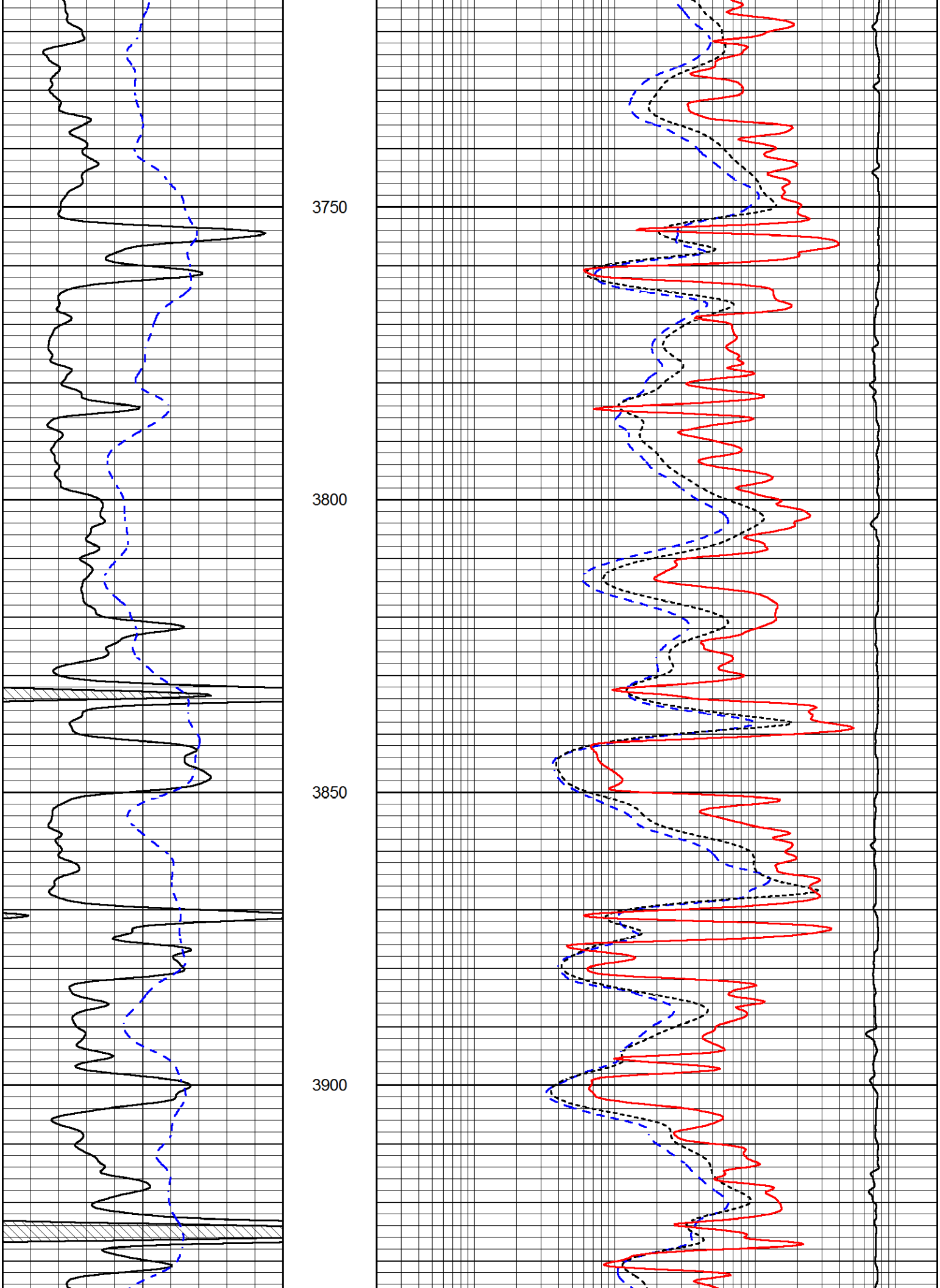
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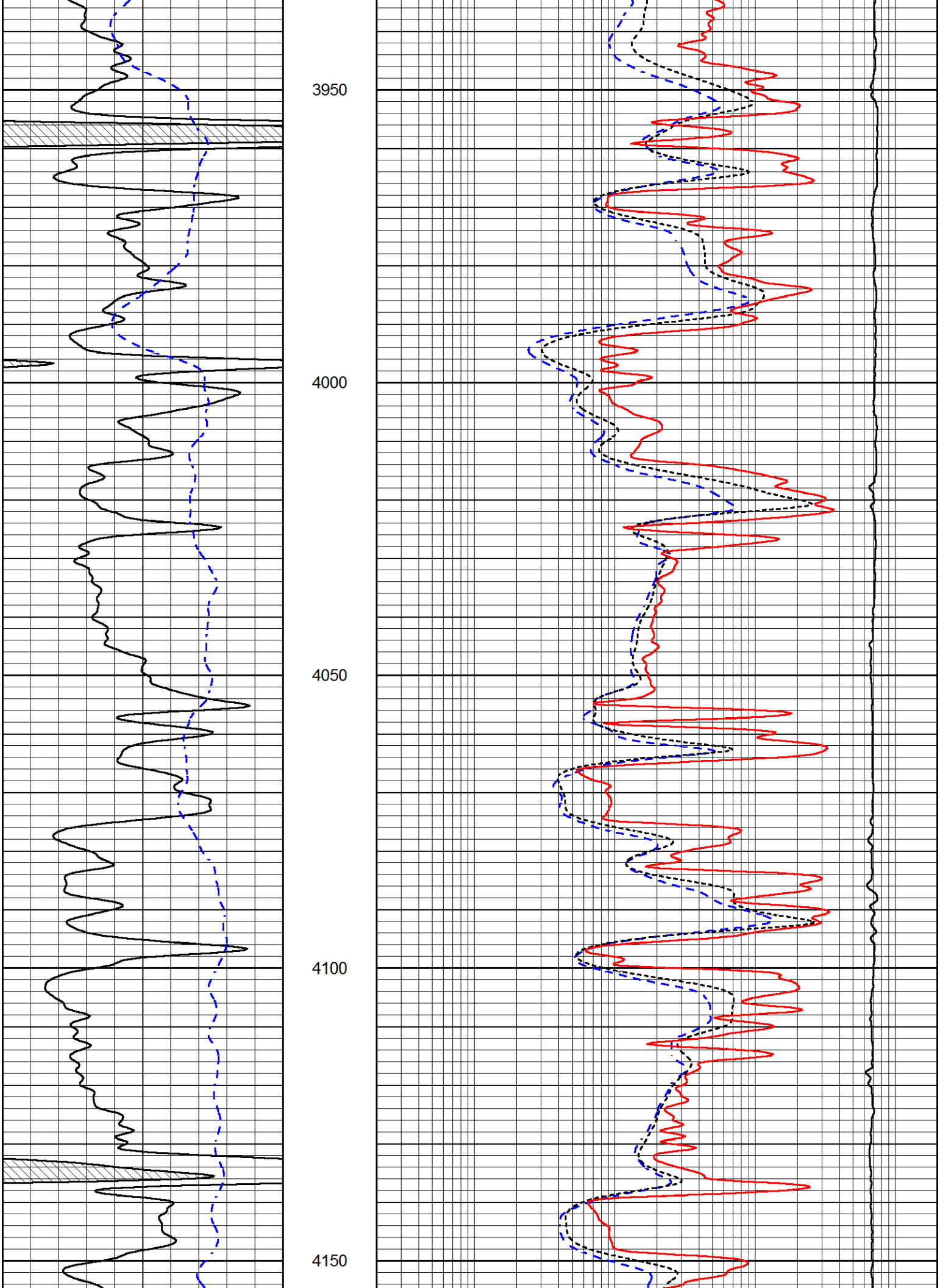
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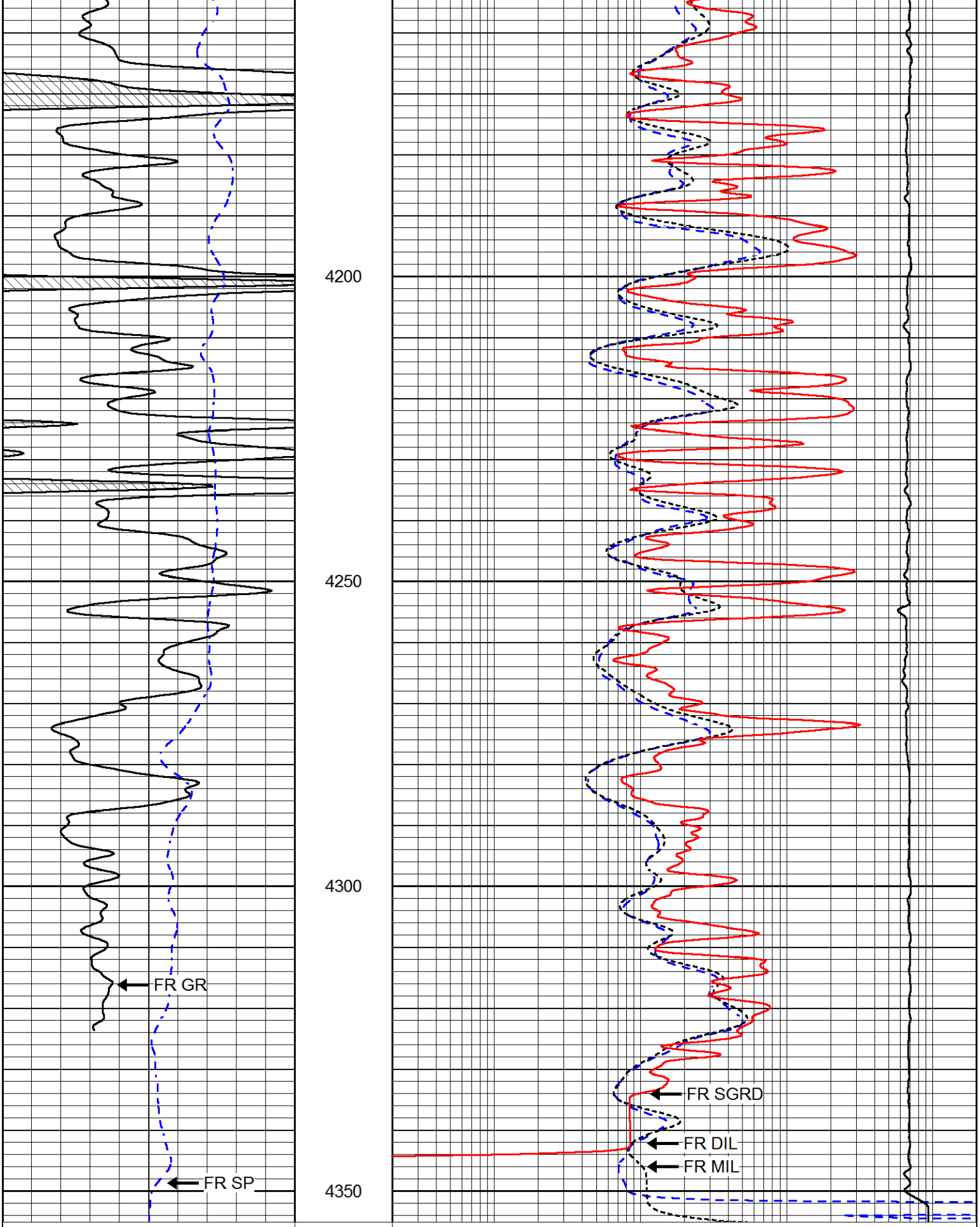

0	GAMMA RAY (GAPI)	150
-200	SP (mV)	0
0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
15000	LINE TENSION (lb)	0

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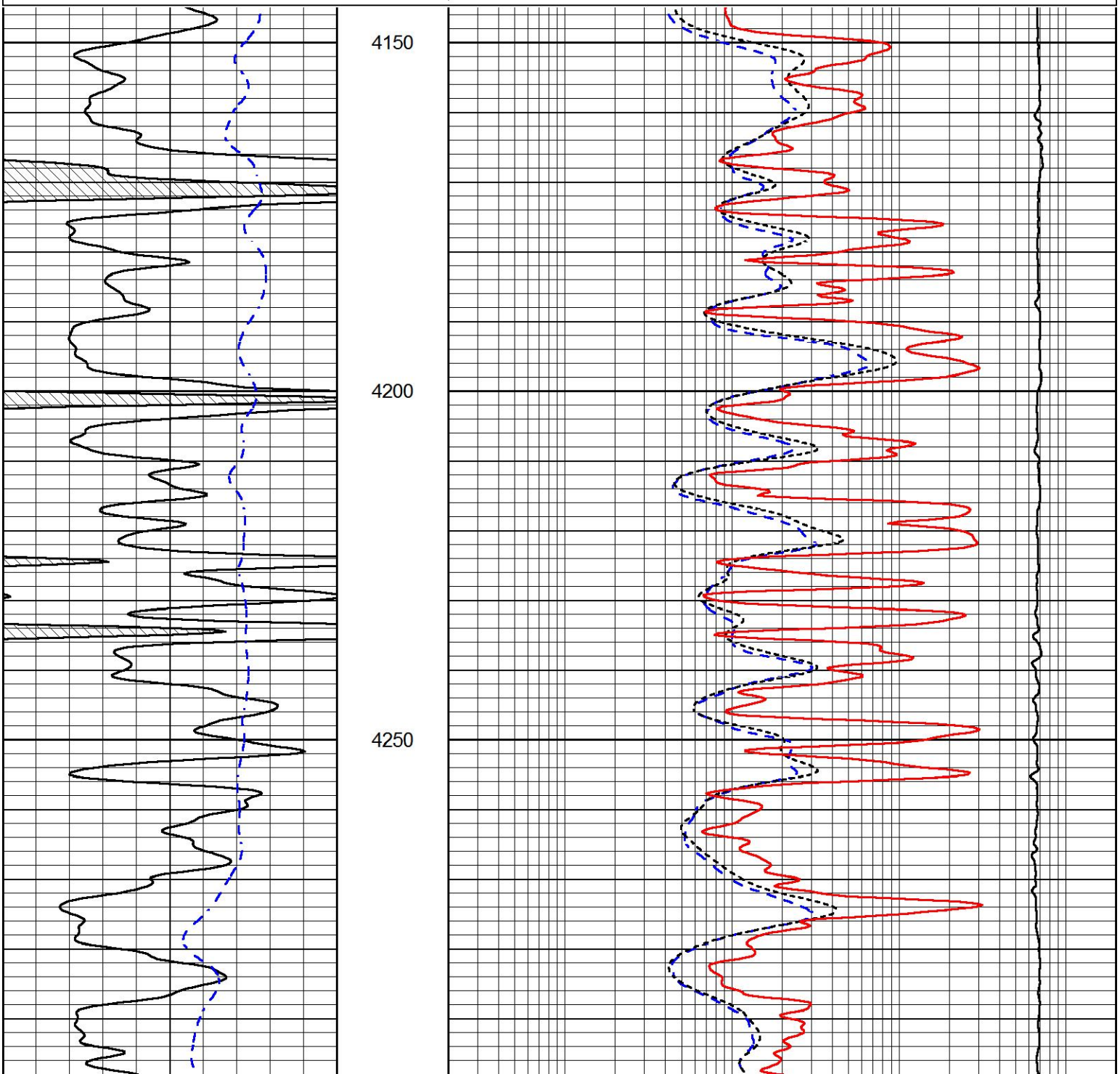
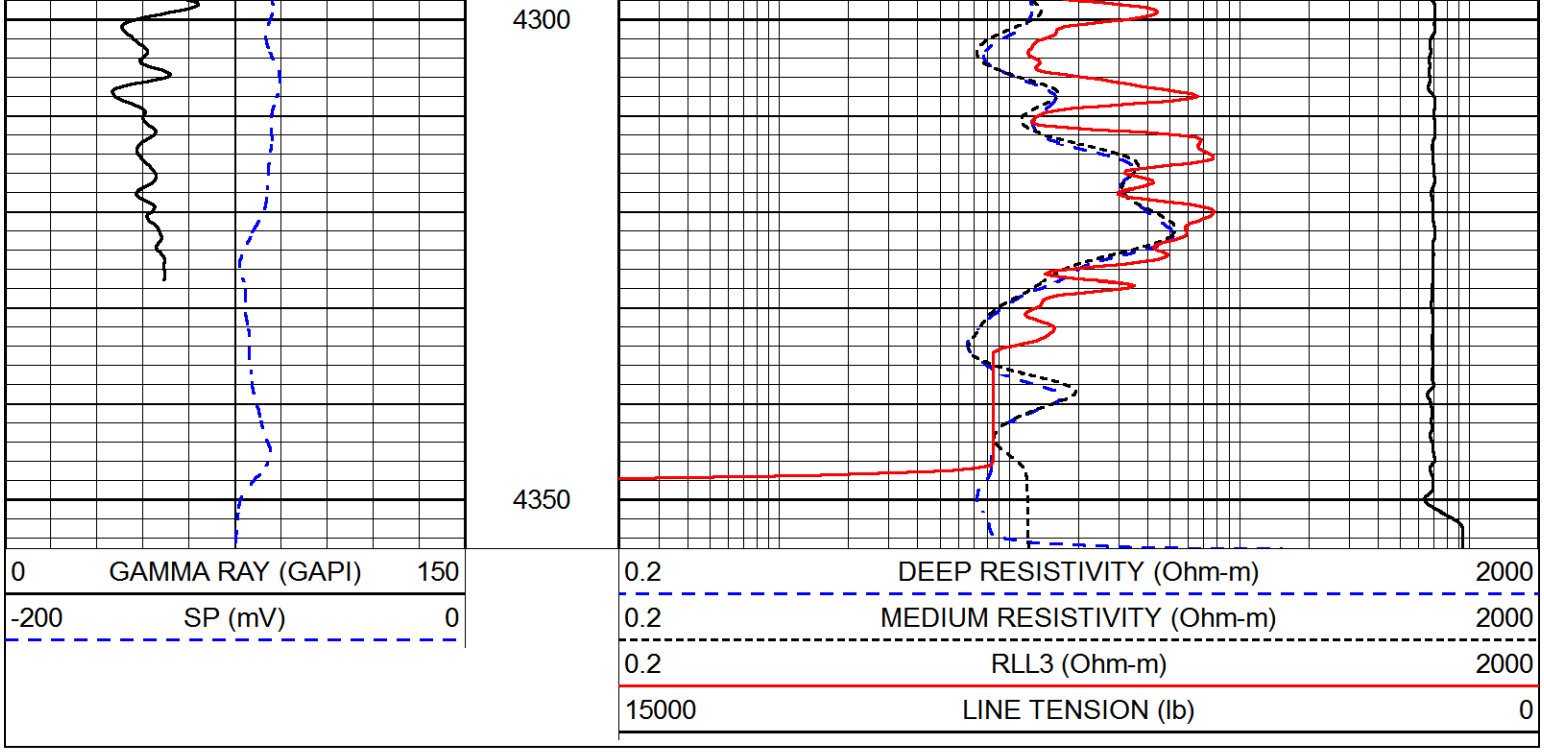
REPEAT SECTION

Database File	marexco_lundgren_32_28.db
Dataset Pathname	pass3.1
Presentation Format	dil
Dataset Creation	Thu Jan 10 06:11:37 2019
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





Calibration Report

Database File	marexco_lundgren_32_28.db
Dataset Pathname	pass4.1
Dataset Creation	Thu Jan 10 06:40:50 2019

Dual Induction Calibration Report

Serial-Model:	PSI 988-M&W
Calibration Performed:	Tue Nov 20 10:50:19 2018

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.525	-44.000
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.380	-17.000

Compensated Density Calibration Report

Serial-Model:	934-5002-M&W
Source / Verifier:	/
Master Calibration Performed:	Wed Aug 29 11:03:55 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	3720.16	2661.79	cps
Aluminum	2.675	g/cc	696.57	1725.83	cps

Spine Angle = 75.50

Density/Spine Ratio = 0.532

	Size		Reading
Small Ring	4.00	in	1.16
Large Ring	16.00	in	1.02

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 17:08:01 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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Pioneer Energy Services

Company	MAREXCO, INC
Well	LUNDGREN NO.32-28
Field	LUNDGREN EAST
County	GOVE
State	KANSAS

PIONEER
Pioneer Energy Services

DUAL COMP POROSITY LOG

Company MAREXCO, INC
Well LUNDGREN NO.32-28
Field LUNDGREN EAST
County GOVE State KANSAS

Location: API #: 15-063-22343-00-00
2004' FNL & 1503' FEL
SEC 28 TWP 14S RGE 29W

Other Services: DIL, MEL/SON

Elevation: K.B. 2611', D.F. N/A, G.L. 2606'

Permanent Datum: GROUND LEVEL Elevation 2606'
Log Measured From: KELLY BUSHING
Drilling Measured From: KELLY BUSHING

Company	MAREXCO, INC
Well	LUNDGREN NO.32-28
Field	LUNDGREN EAST
County	GOVE
State	KANSAS
Date	1/10/2019
Run Number	ONE
Type Log	CNL/CDL
Depth Driller	4350'
Depth Logger	4350'
Bottom Logged Interval	4329'
Top Logged Interval	3400'
Type Fluid In Hole	CHEMICAL
Salinity, PPM CL	4000
Density	9.2
Level	FULL
Max. Rec. Temp. F	120 DEG. F.
Operating Rig Time	4 HOURS
Equipment -- Location	108 HAYS
Recorded By	M. HISS
Witnessed By	LARRY NICHOLSON

Borehole Record

Run No.	Bit	From	To
ONE	12.25"	00'	261'
TWO	7.875"	261'	TD

Casing Record

Size	Wgt.	From	To
8.625"	23#	00'	261'

J. HENRICKSON

<<< Fold Here >>>

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

GOVE KANSAS
10 MILES SOUTH TO GOVE RD1
2 MILES WEST, SOUTH INTO

Log Measured From: KELLY BUSHING 5 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: M. HISS	Primary Witness: LARRY NICHOLSON
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\marexco_lundgren_32_28.db
Dataset field/well/run1/pass4.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	120	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	75	30	Off	4350

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 (934-5002)	8.50	4.00	250.00
LSD	20.85					
DCAL	20.83					
SSD	20.35					
RLL3	15.80					
RLL3F	15.79					
			DIL-M&W (PSI 988)	18.50	3.50	220.00
CILD	8.00					

CILM	4.70				
SP	0.20				

Dataset: marexco_lundgren_32_28.db: field/well/run1/pass4.1
Total length: 35.50 ft
Total weight: 620.00 lb
O.D.: 4.00 in

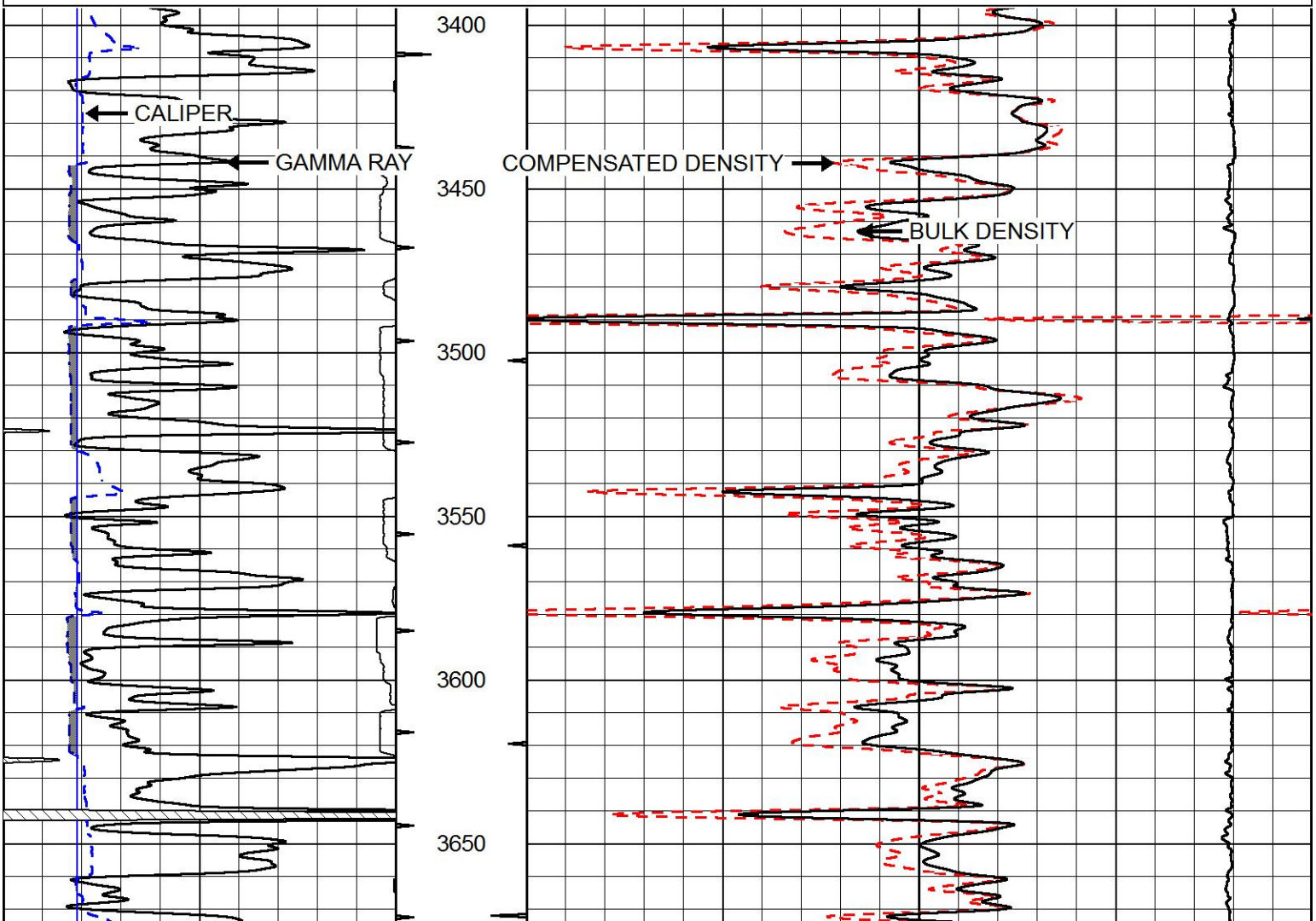
PIONEER
Pioneer Energy Services

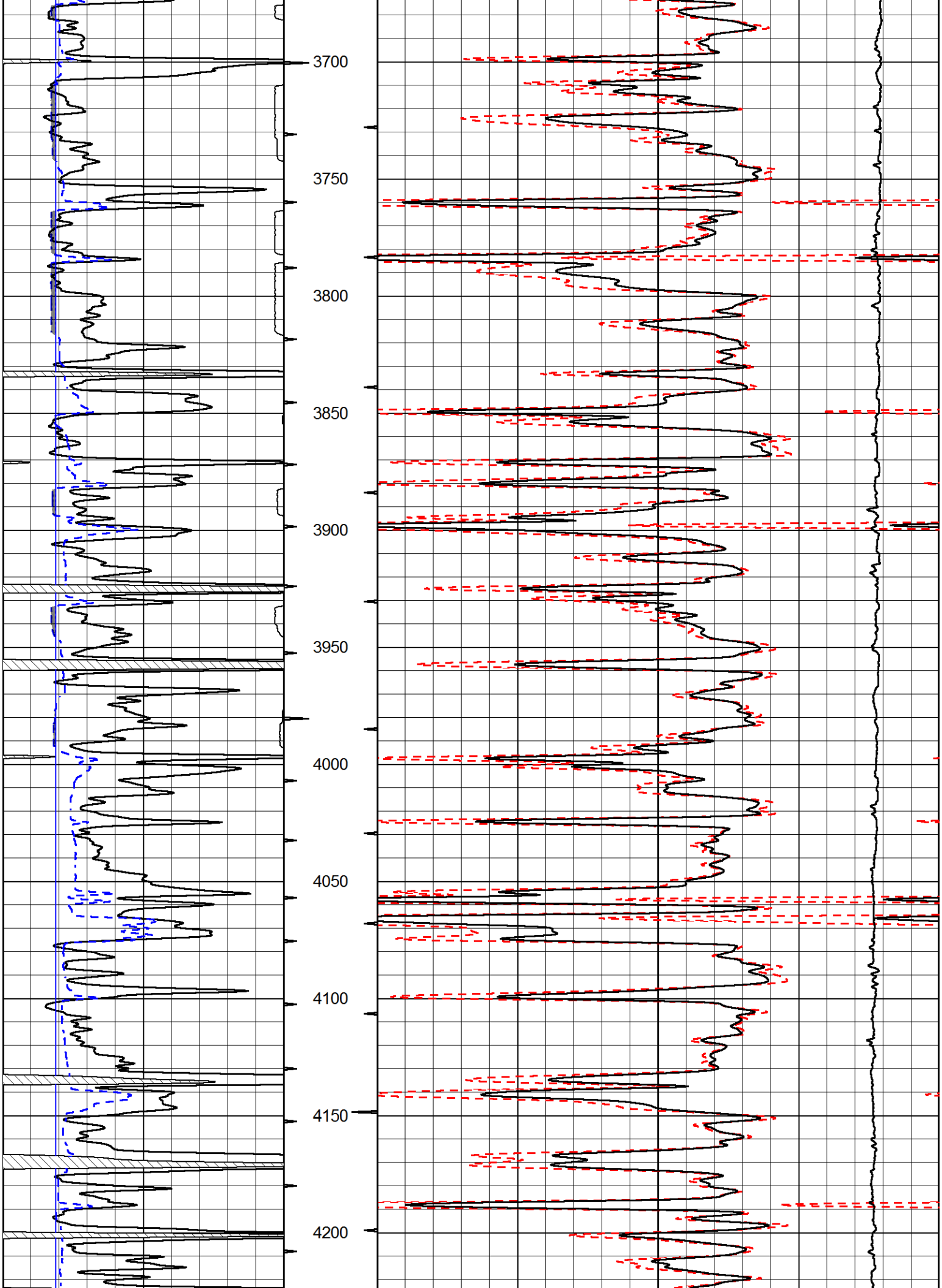
MAIN PASS

Database File	marexco_lundgren_32_28.db
Dataset Pathname	pass4.1
Presentation Format	cdl
Dataset Creation	Thu Jan 10 06:40:50 2019
Charted by	Depth in Feet scaled 1:600

0	GAMMA RAY (GAPI)	150
6	CALIPER (in)	16

30	COMPENSATED DENSITY (pu)	-10
2	BULK DENSITY (g/cc)	3
15000	LINE TENSION (lb)	0

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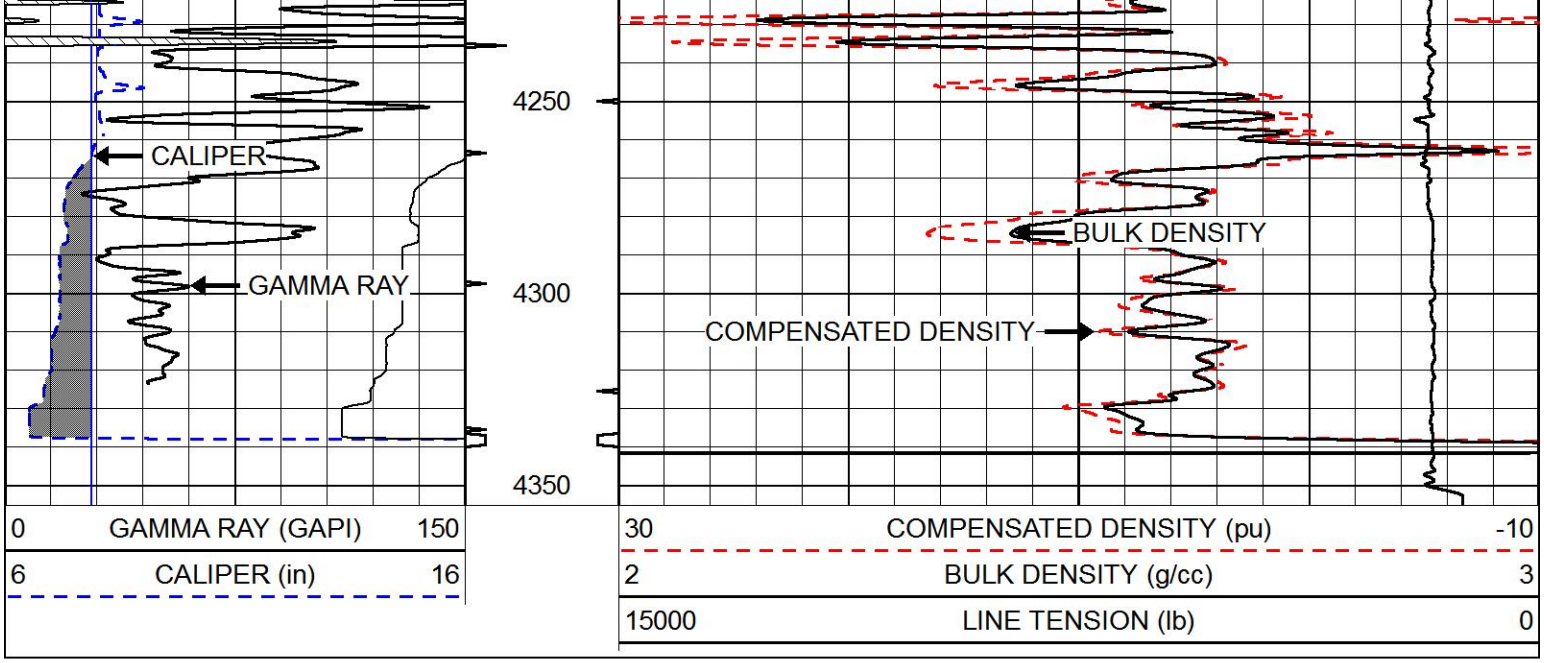
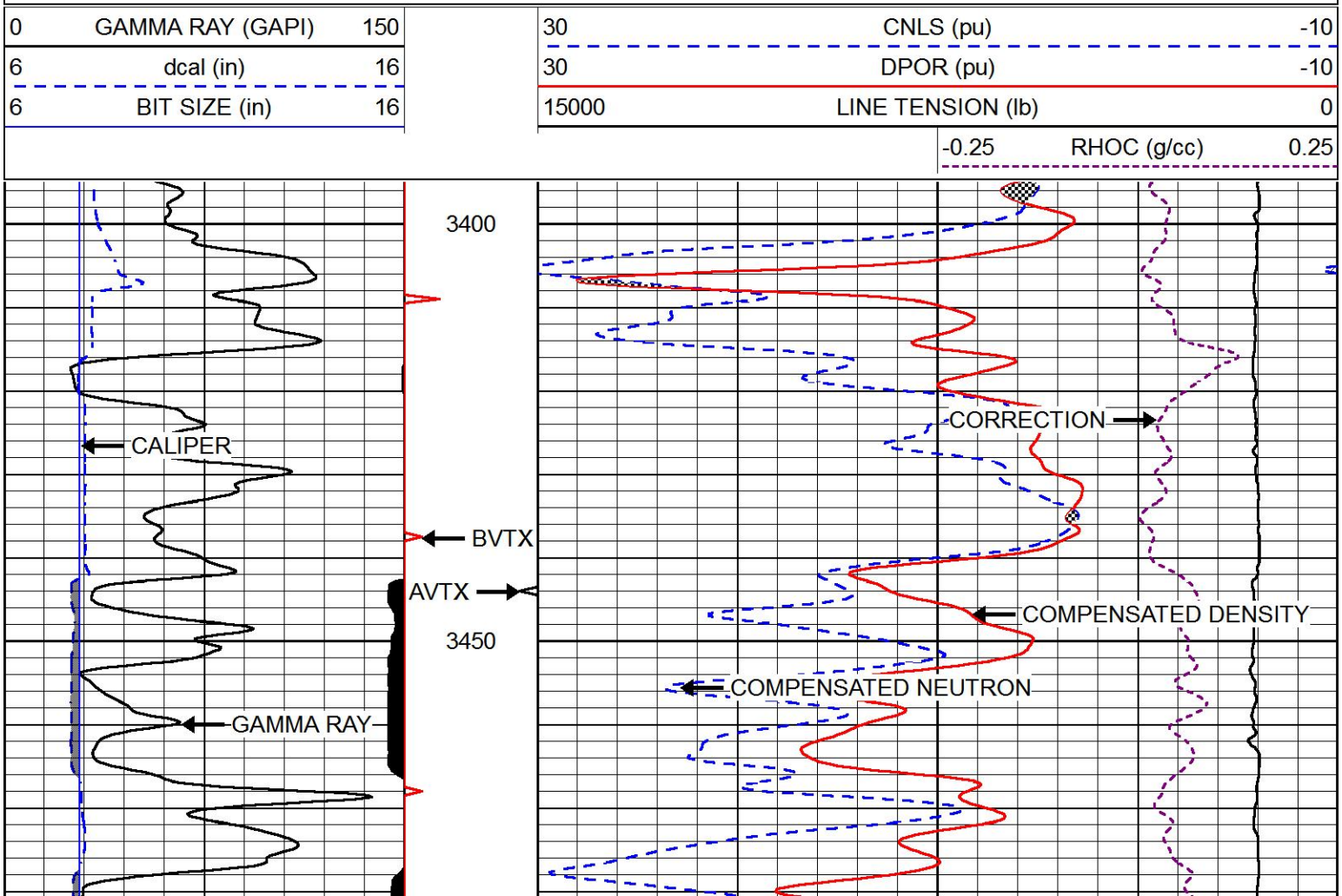
4100
4150
4200

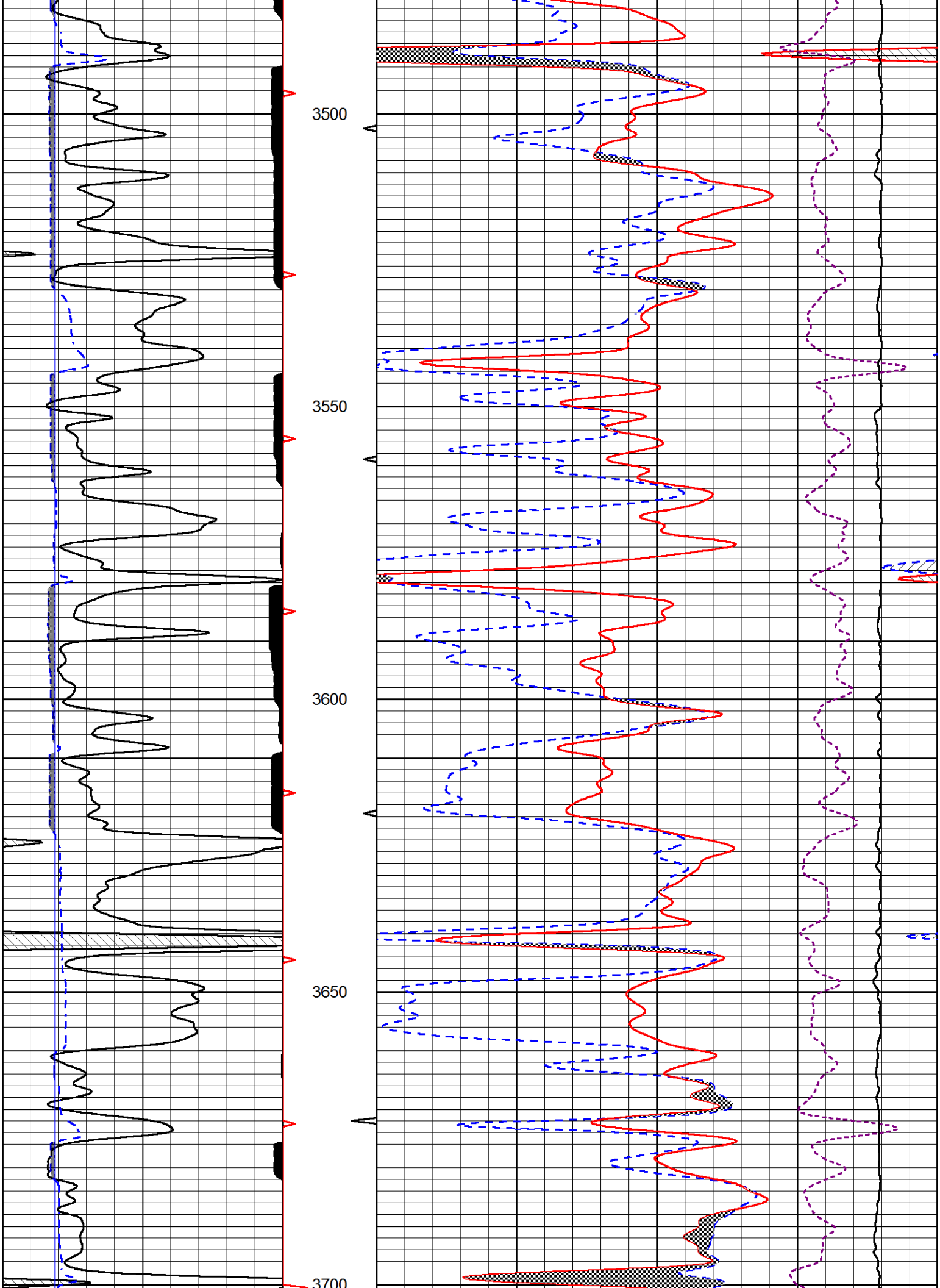


PIONEER
Pioneer Energy Services

MAIN PASS

Database File	marexco_lundgren_32_28.db
Dataset Pathname	pass4.1
Presentation Format	cndlspec
Dataset Creation	Thu Jan 10 06:40:50 2019
Charted by	Depth in Feet scaled 1:240

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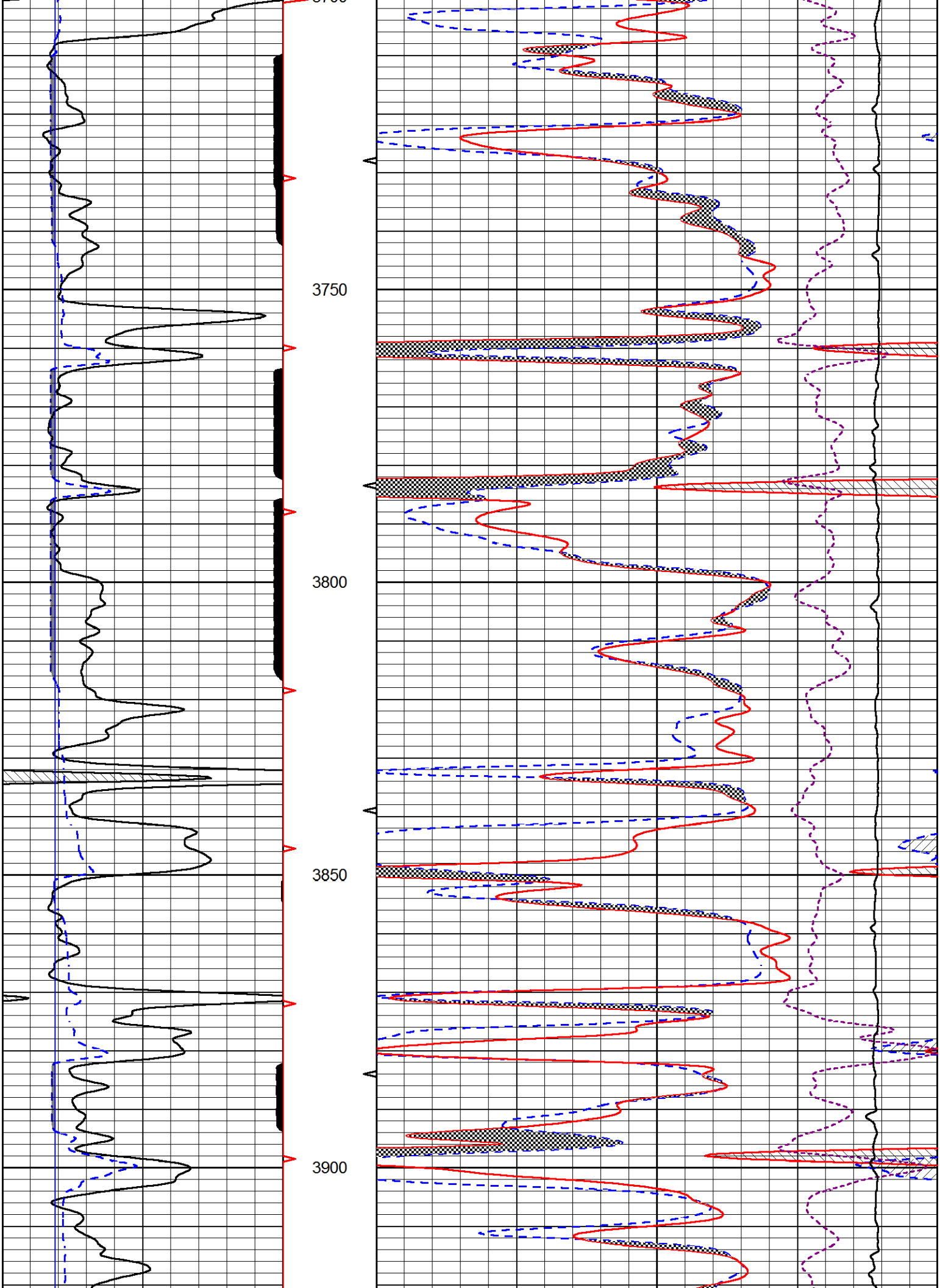
3650
3700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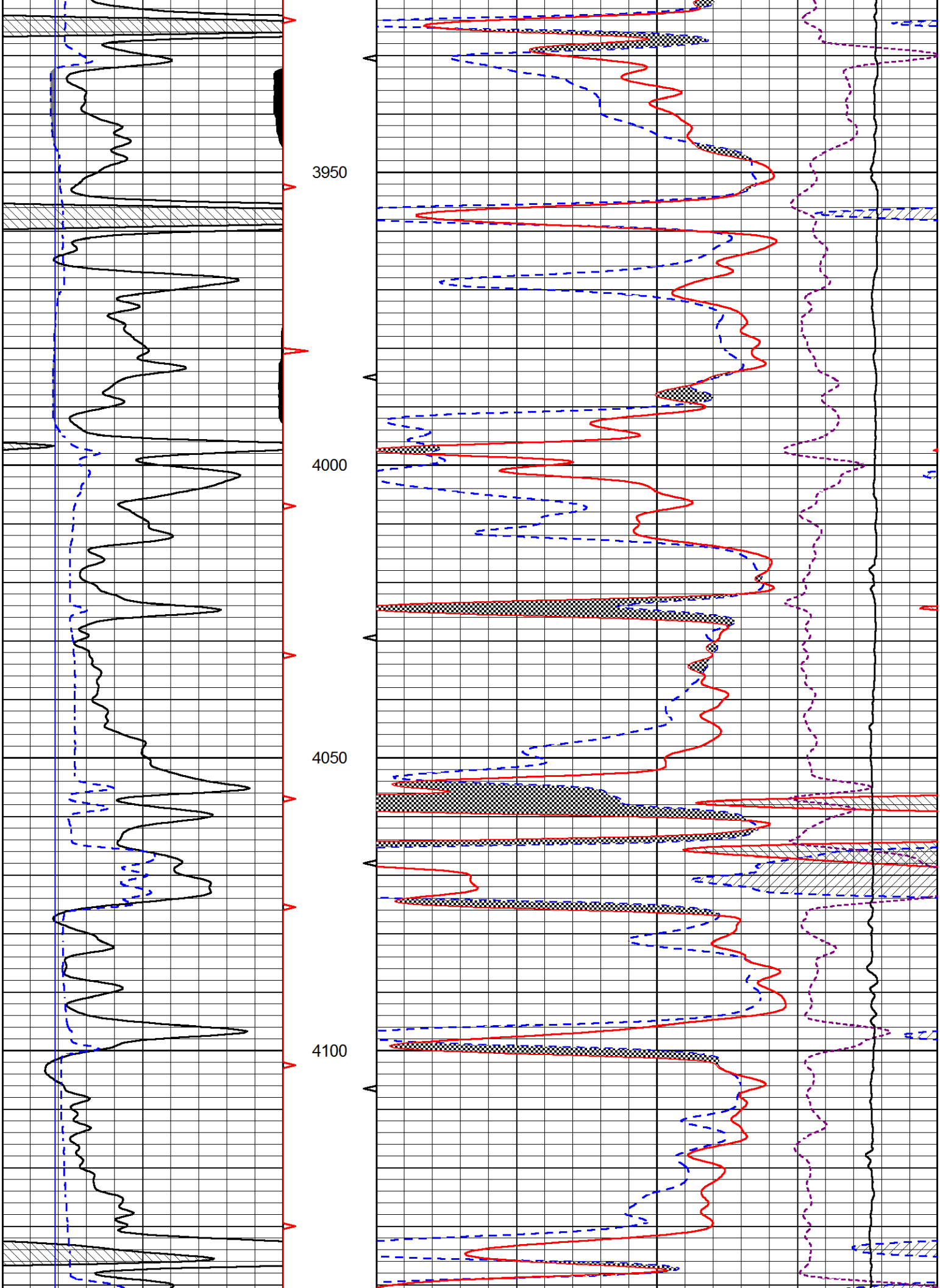
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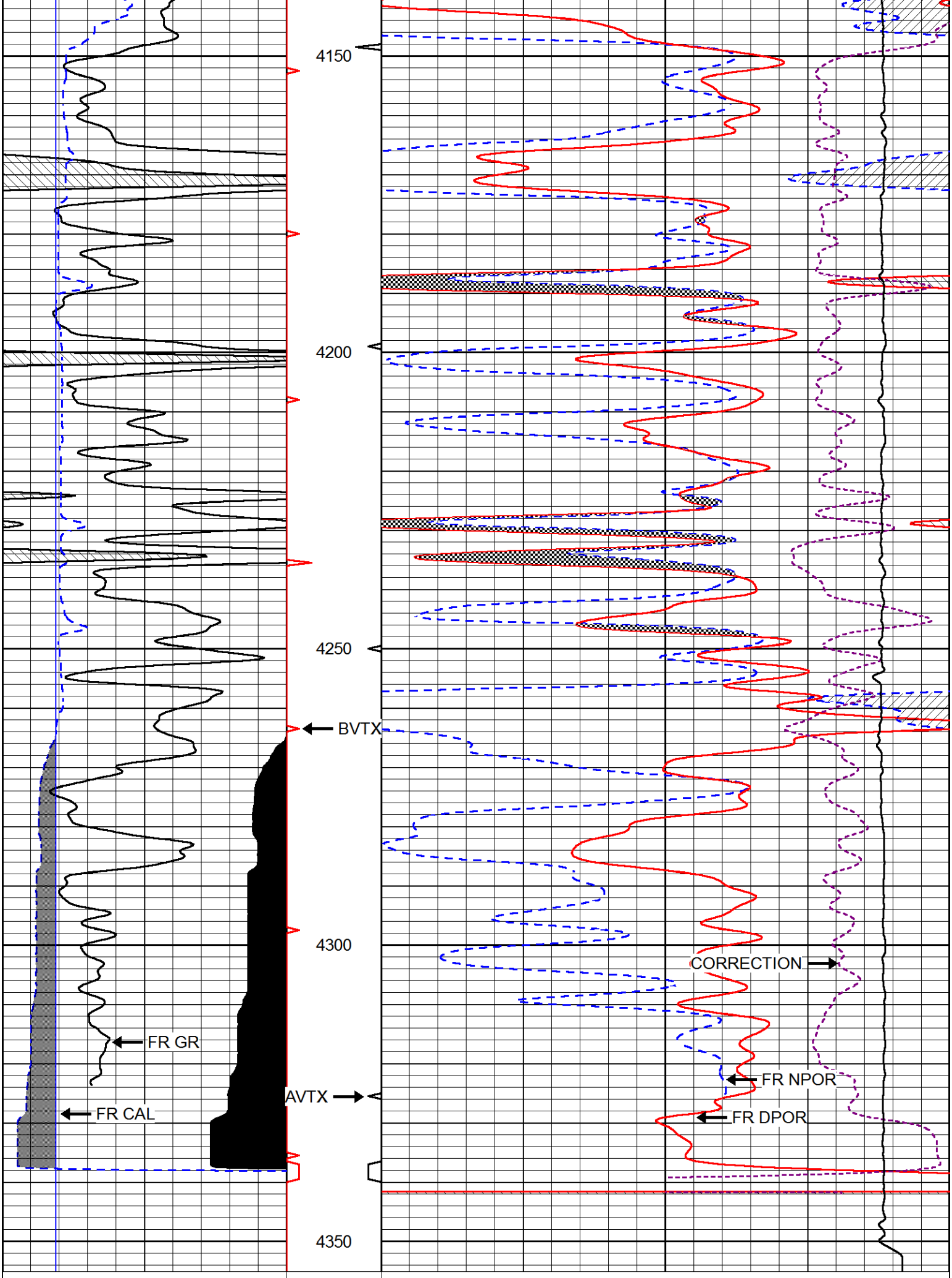

4150
4200
4250
BVTX
4300
CORRECTION
FR GR
FR NPOR
AVTX
FR CAL
FR DPOR
4350
0
GAMMA RAY (GAPI)
150
30
CNLS (pu)
-10

6	dcal (in)	16
6	BIT SIZE (in)	16

30	DPOR (pu)	-10
15000	LINE TENSION (lb)	0
-0.25	RHOC (g/cc)	0.25

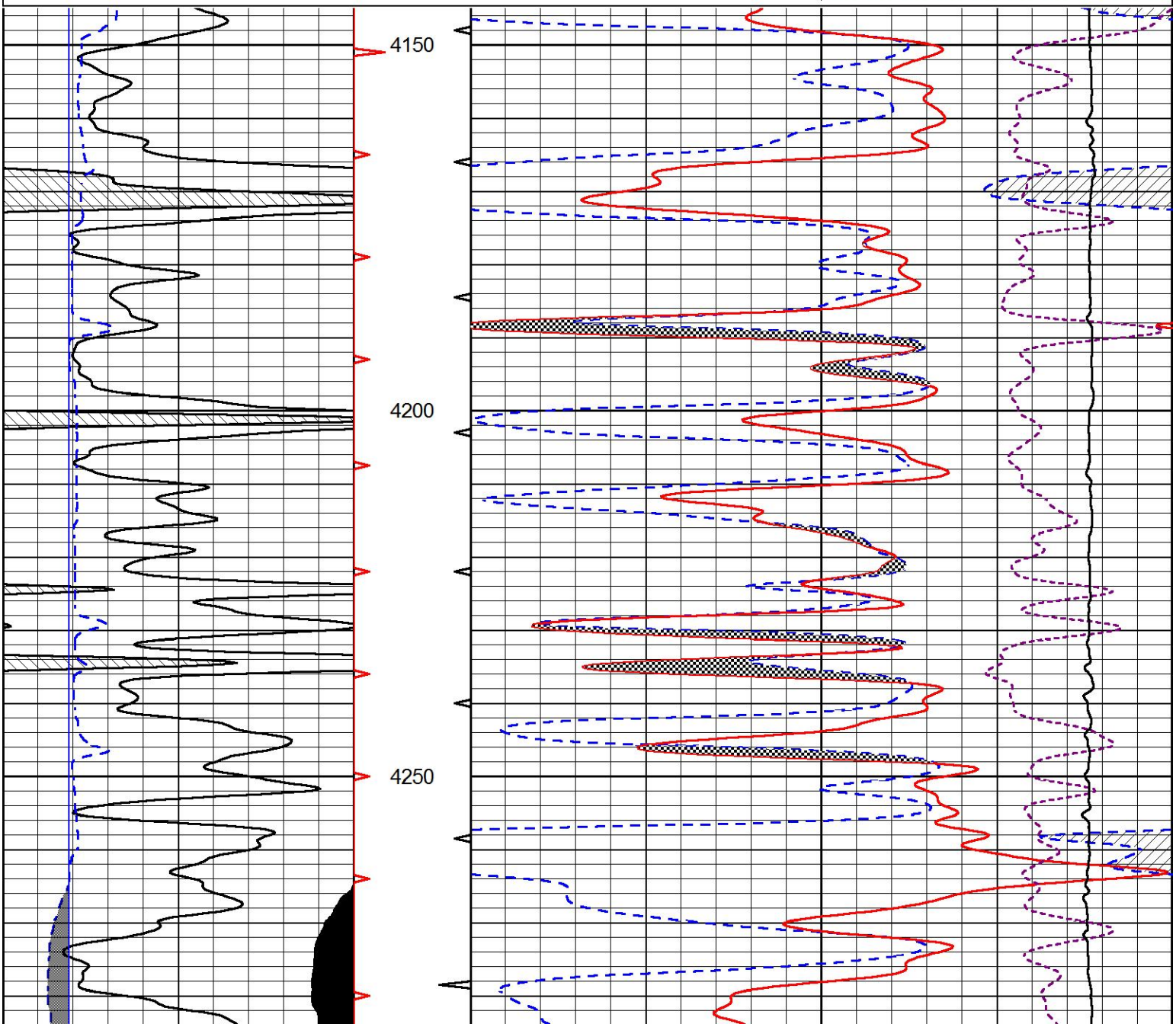
PIONEER
Pioneer Energy Services

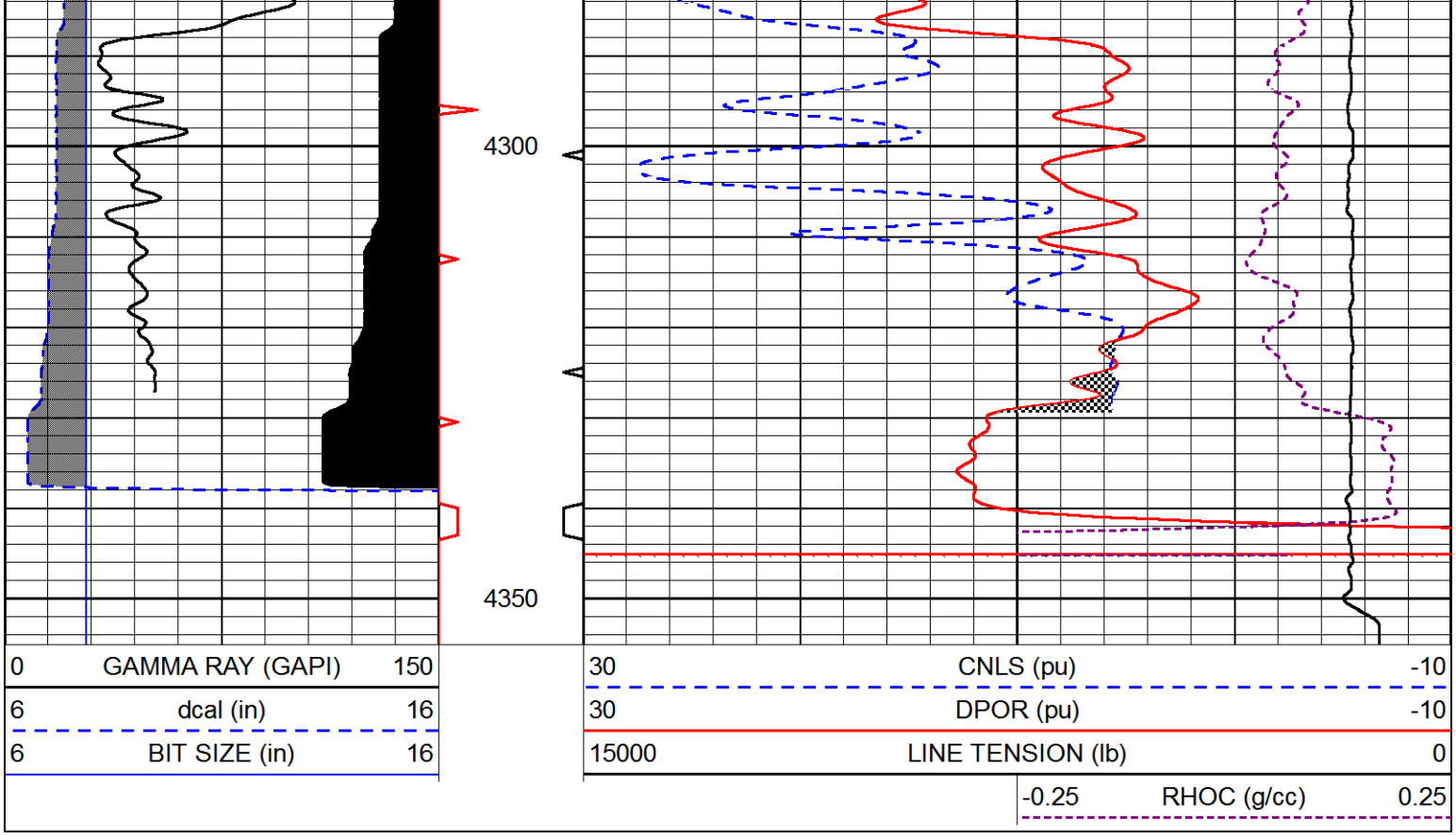
REPEAT SECTION

Database File	marexco_lundgren_32_28.db
Dataset Pathname	pass3.1
Presentation Format	cndlspec
Dataset Creation	Thu Jan 10 06:11:37 2019
Charted by	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
6	dcal (in)	16
6	BIT SIZE (in)	16

30	CNLS (pu)	-10
30	DPOR (pu)	-10
15000	LINE TENSION (lb)	0
-0.25	RHOC (g/cc)	0.25





Calibration Report

Database File	marexco_lundgren_32_28.db
Dataset Pathname	pass4.1
Dataset Creation	Thu Jan 10 06:40:50 2019

Dual Induction Calibration Report

Serial-Model:	PSI 988-M&W
Calibration Performed:	Tue Nov 20 10:50:19 2018

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.525	-44.000
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.380	-17.000

Compensated Density Calibration Report

Serial-Model:	934-5002-M&W
Source / Verifier:	/
Master Calibration Performed:	Wed Aug 29 11:03:55 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	3720.16	2661.79	cps
Aluminum	2.675	g/cc	696.57	1725.83	cps

Spine Angle = 75.50

Density/Spine Ratio = 0.532

	Size	Reading

Small Ring	4.00	in	1.16
Large Ring	16.00	in	1.02

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 17:08:01 2017	
Calibrator Value:	1000.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	6.2	cps
Sensitivity:	0.5200	GAPI/cps

PIONEER
Pioneer Energy Services

Company	MAREXCO, INC
Well	LUNDGREN NO.32-28
Field	LUNDGREN EAST
County	GOVE
State	KANSAS

PIONEER
Pioneer Energy Services

MICRORESISTIVITY LOG

Company MAREXCO, INC
Well LUNDGREN NO.32-28
Field LUNDGREN EAST
County GOVE State KANSAS

Company MAREXCO, INC
Well LUNDGREN NO.32-28
Field LUNDGREN EAST
County GOVE State KANSAS

Location: API #: 15-063-22343-00-00
2004' FNL & 1503' FEL
SEC 28 TWP 14S RGE 29W

Other Services
CNL/CDL
DIL/SON

Elevation
K.B. 2611'
D.F. N/A
G.L. 2606'

Permanent Datum GROUND LEVEL Elevation 2606'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Date	1/10/2019		
Run Number	TWO		
Depth Driller	4350'		
Depth Logger	4350'		
Bottom Logged Interval	4349'		
Top Log Interval	3400'		
Casing Driller	8.625" @ 261'		
Casing Logger	263'		
Bit Size	7.875"		
Type Fluid in Hole	CHEMICAL		
Salinity,ppm CL	4000		
Density / Viscosity	9.2 61		
pH / Fluid Loss	10.7 9.2		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.75 @ 64		
Rmf @ Meas. Temp	.56 @ 64		
Rmc @ Meas. Temp	1.01 @ 64		
Source of Rmf / Rmc	CHARTS		
Rm @ BHT	.40 @ 120		
Operating Rig Time	4 HOURS		
Max Rec. Temp. F	120 DEG. F.		
Equipment Number	108		
Location	HAYS		
Recorded By	M. HISS	J. HENRICKSON	
Witnessed By	LARRY NICHOLSON		

<<< Fold Here >>>

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

GOVE KANSAS
10 MILES SOUTH TO GOVE RD1
2 MILES WEST, SOUTH INTO

Log Measured From: KELLY BUSHING 5 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: M. HISS	Primary Witness: LARRY NICHOLSON
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Log Variables

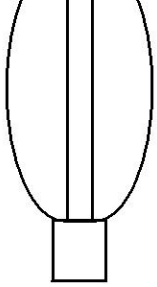
DatabaseC:\ProgramData\Warrior\Data\marexco_lundgren_32_28.db
Dataset field/well/run1/pass4.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	120	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	75	30	Off	4350

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
			ML-Armadillo (Armadillo-1) Pengo micro log tool mandrel with Armadillo Electronics	5.00	3.50	100.00
MCAL	22.50					
MI	22.50					
MN	22.50					
WVF4	13.50		SLT-PENGO (0001)	16.00	3.50	300.00
WVF1	13.50					
WVF3	11.50					
WVF2	11.50					



CENT-PENGO	5.50	3.00	70.00

Dataset: marexco_lundgren_32_28.db: field/well/sonmel/pass2
Total length: 26.50 ft
Total weight: 470.00 lb
O.D.: 3.50 in

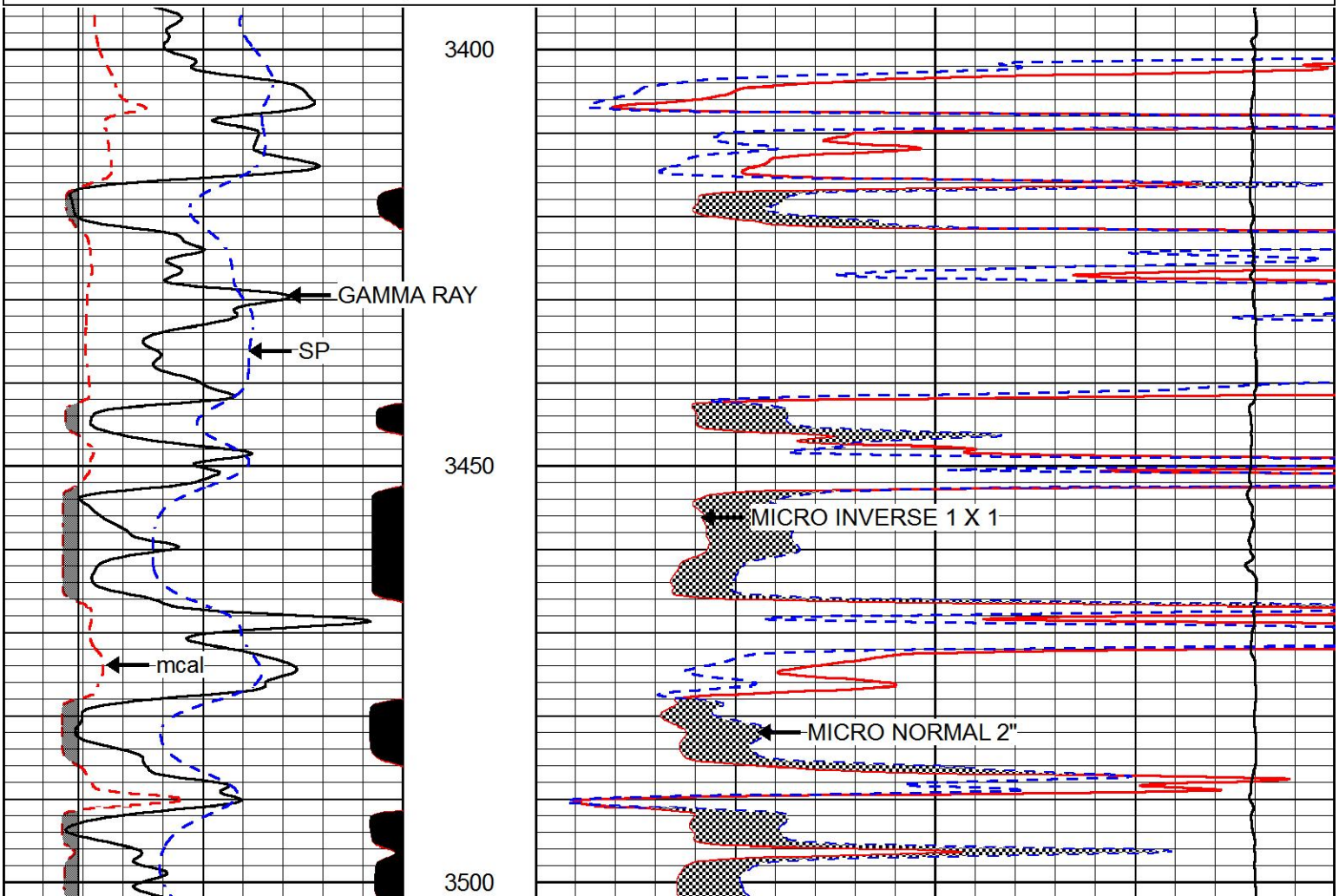
PIONEER
Pioneer Energy Services

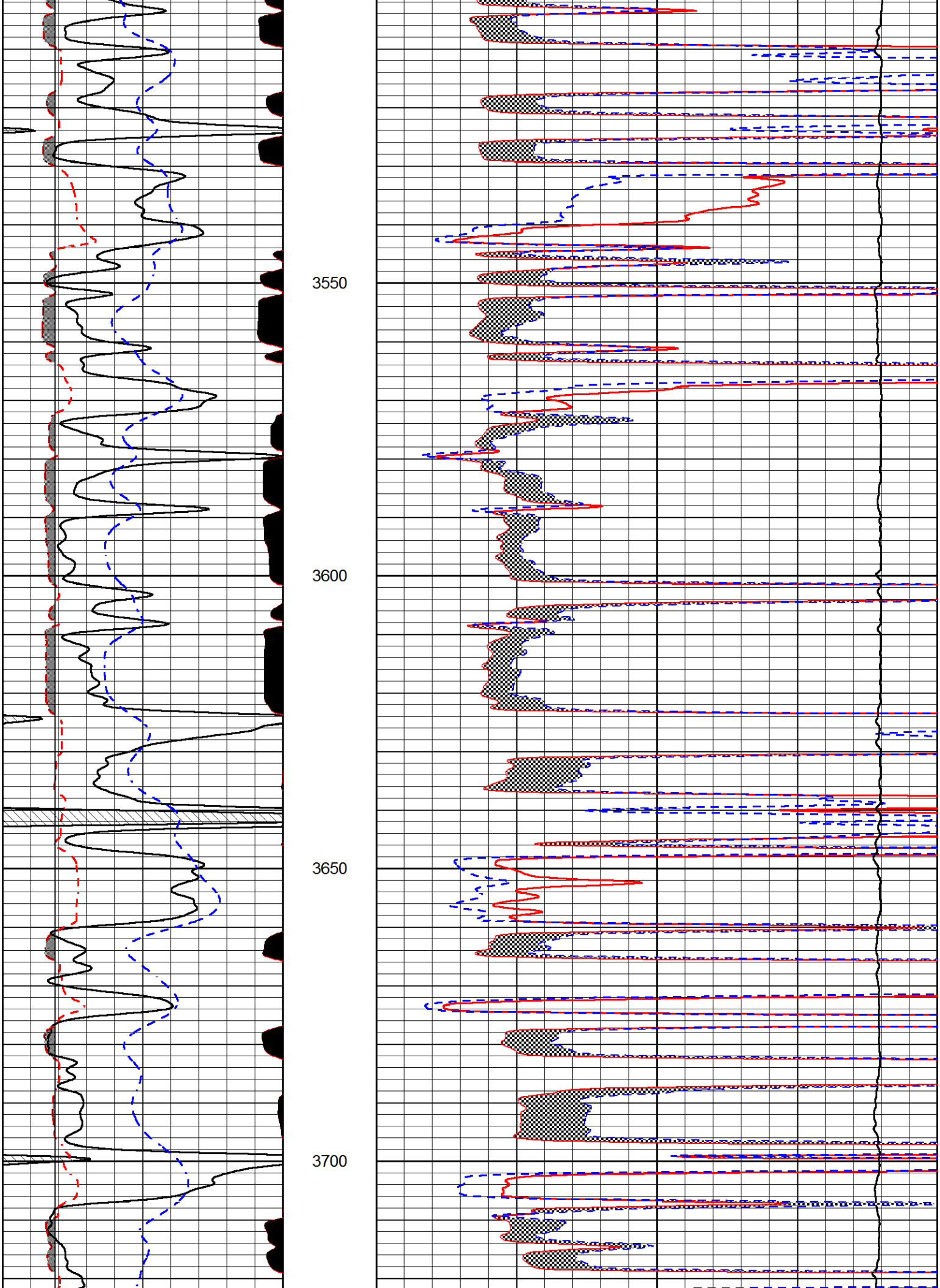
MAIN PASS

Database File	marexco_lundgren_32_28.db
Dataset Pathname	pass4.1
Presentation Format	micro
Dataset Creation	Thu Jan 10 06:40:50 2019
Charted by	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0

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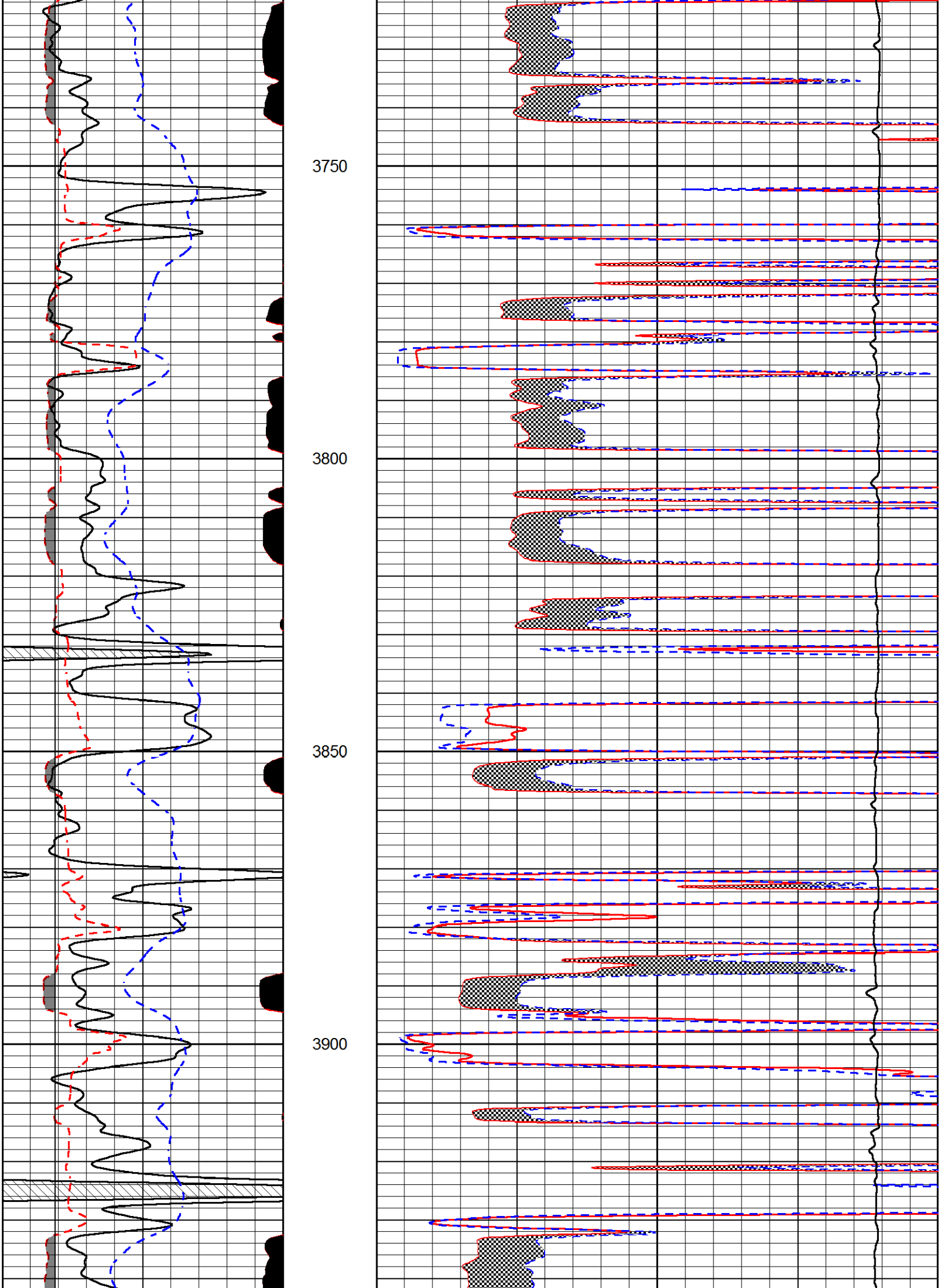
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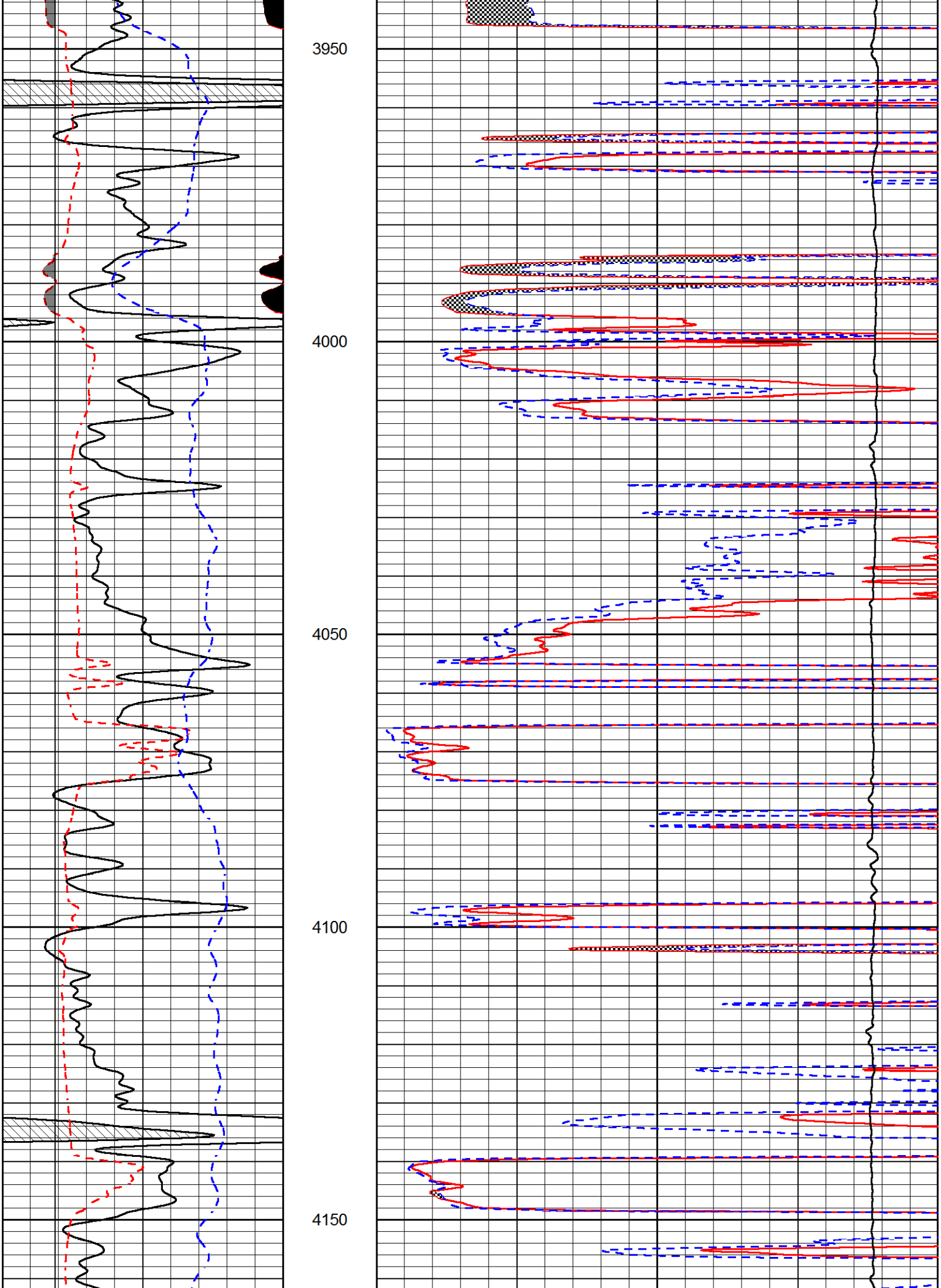
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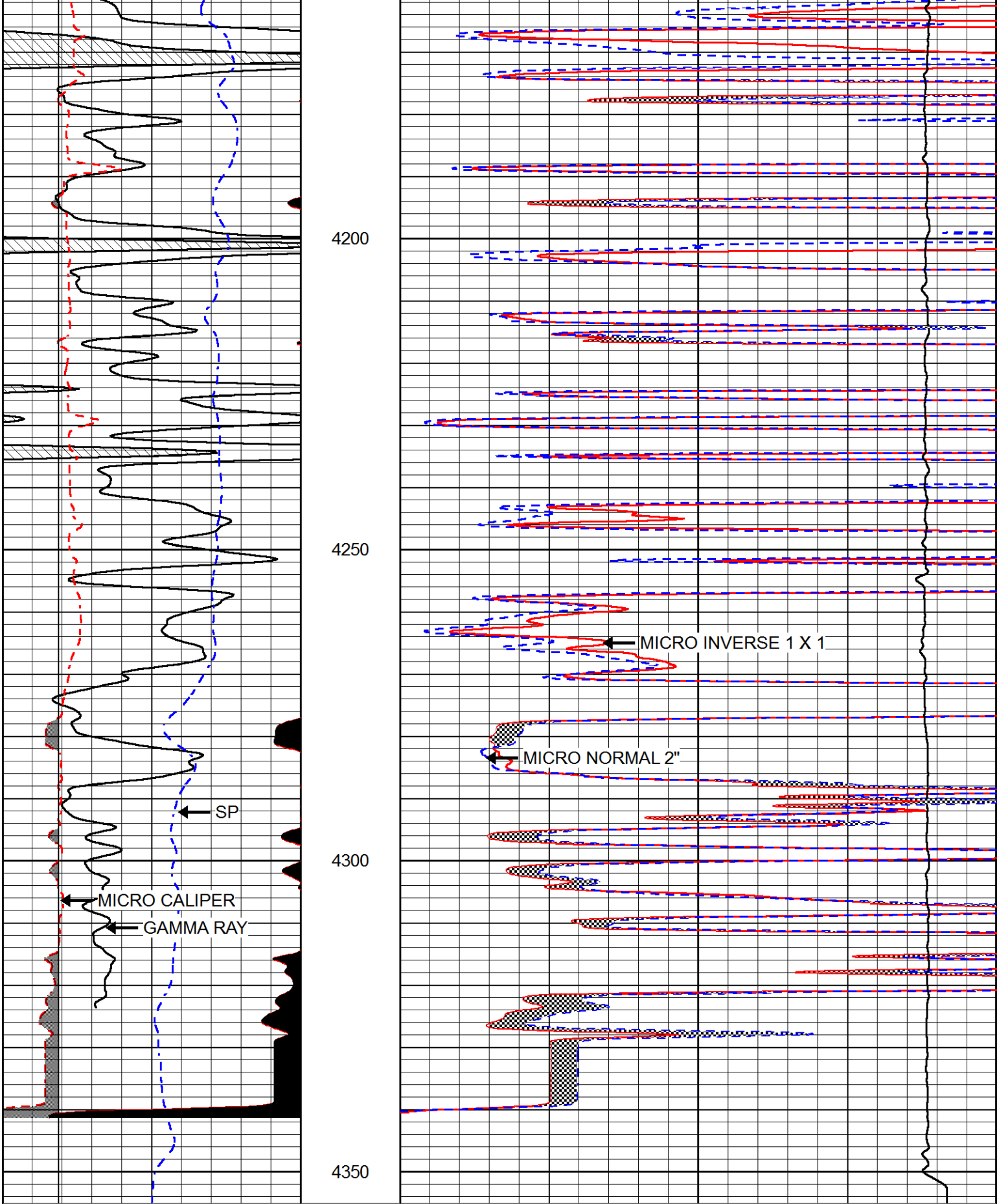
4100
4150



0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0

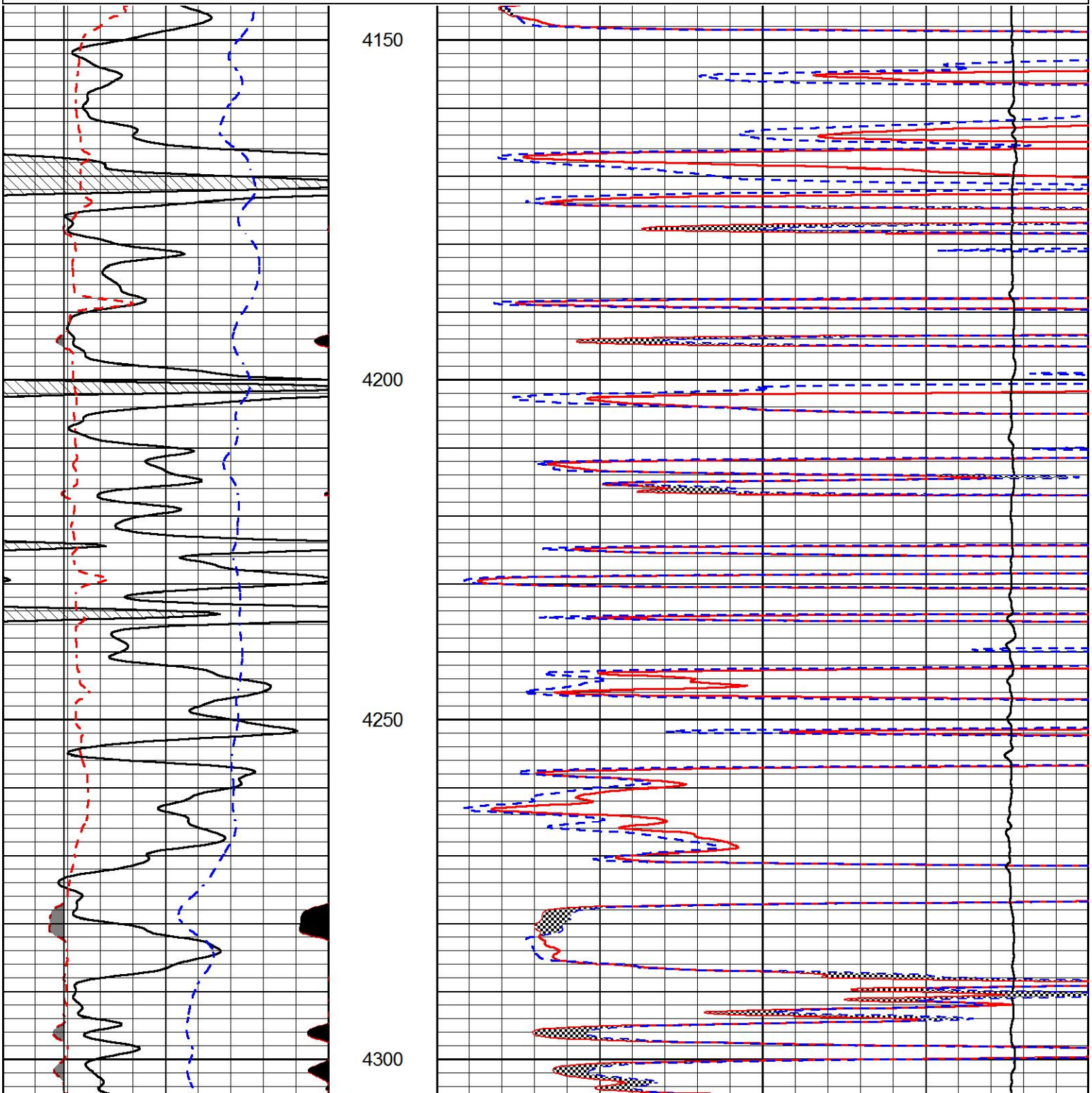
PIONEER
Pioneer Energy Services

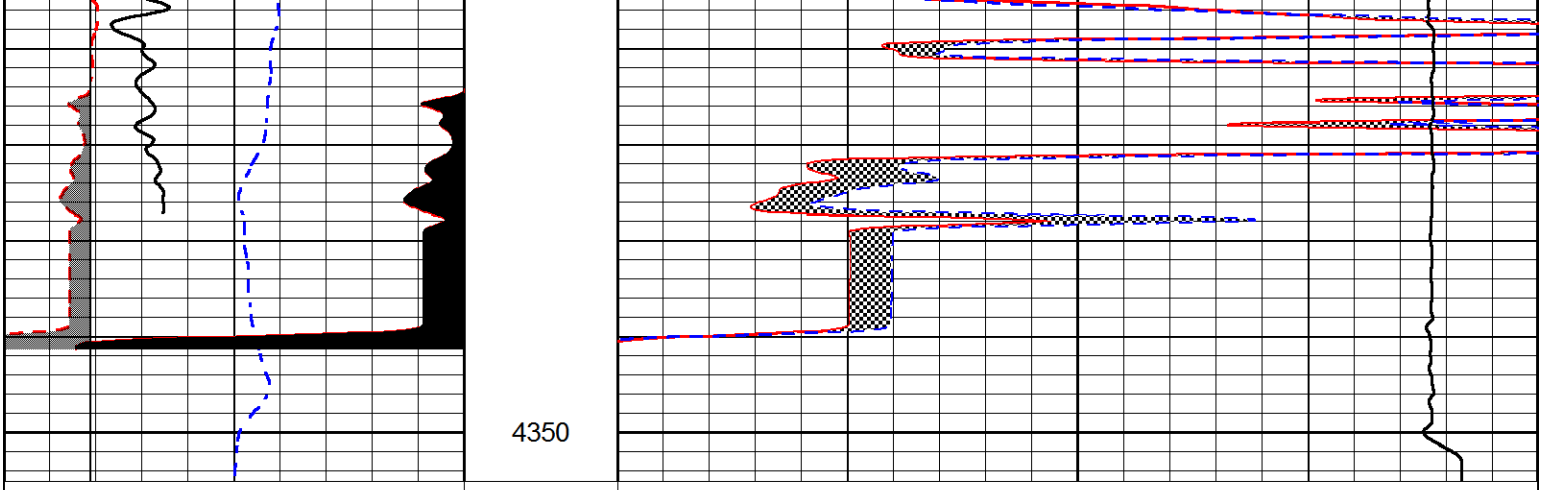
REPEAT SECTION

Database File	marexco_lundgren_32_28.db
Dataset Pathname	pass3.1
Presentation Format	micro
Dataset Creation	Thu Jan 10 06:11:37 2019
Charted by	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0





0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0

Calibration Report

Database File	marexco_lundgren_32_28.db
Dataset Pathname	pass4.1
Dataset Creation	Thu Jan 10 06:40:50 2019

Dual Induction Calibration Report

Serial-Model:	PSI 988-M&W
Calibration Performed:	Tue Nov 20 10:50:19 2018

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.525	-44.000
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.380	-17.000

Compensated Density Calibration Report

Serial-Model:	934-5002-M&W
Source / Verifier:	/
Master Calibration Performed:	Wed Aug 29 11:03:55 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	3720.16	2661.79	cps
Aluminum	2.675	g/cc	696.57	1725.83	cps

Spine Angle = 75.50

Density/Spine Ratio = 0.532

	Size		Reading
Small Ring	4.00	in	1.16
Large Ring	16.00	in	1.02

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 17:08:01 2017	
Calibrator Value:	1000.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	6.2	cps
Sensitivity:	0.5200	GAPI/cps

PIONEER
Pioneer Energy Services

Company	MAREXCO, INC
Well	LUNDGREN NO.32-28
Field	LUNDGREN EAST
County	GOVE
State	KANSAS

PIONEER
Pioneer Energy Services

BOREHOLE COMPENSATED SONIC LOG

Company MAREXCO, INC
Well LUNDGREN NO.32-28
Field LUNDGREN EAST
County GOVE State KANSAS

Location: API #: 15-063-22343-00-00
2004' FNL & 1503' FEL
SEC 28 TWP 14S RGE 29W

Other Services
CNL/CDL
DIL/MEL

Permanent Datum GROUND LEVEL Elevation 2606'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2611'
D.F. N/A
G.L. 2606'

Company	MAREXCO, INC
Well	LUNDGREN NO.32-28
Field	LUNDGREN EAST
County	GOVE
State	KANSAS
Date	1/10/2019
Run Number	TWO
Type Log	BHCS
Depth Driller	4350'
Depth Logger	4350'
Bottom Logged Interval	4339'
Top Logged Interval	250'
Type Fluid In Hole	CHEMICAL
Salinity, PPM CL	4000
Density	9.2
Level	FULL
Max. Rec. Temp. F	120 DEG. F.
Operating Rig Time	4 HOURS
Equipment -- Location	108 HAYS
Recorded By	M. HISS
Witnessed By	LARRY NICHOLSON

Borehole Record

Run No.	Bit	From	To
ONE	12.25"	00'	261'
TWO	7.875"	261'	TD

Casing Record

Size	Wgt.	From	To
8.625"	23#	00'	261'

J. HENRICKSON

<<< Fold Here >>>

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

GOVE KANSAS
10 MILES SOUTH TO GOVE RD1
2 MILES WEST, SOUTH INTO

Log Measured From: KELLY BUSHING 5 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: M. HISS	Primary Witness: LARRY NICHOLSON
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Log Variables

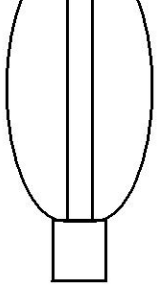
DatabaseC:\ProgramData\Warrior\Data\marexco_lundgren_32_28.db
Dataset field/well/run1/pass4.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	120	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	75	30	Off	4350

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
			ML-Armadillo (Armadillo-1) Pengo micro log tool mandrel with Armadillo Electronics	5.00	3.50	100.00
MCAL	22.50					
MI	22.50					
MN	22.50					
WVF4	13.50		SLT-PENGO (0001)	16.00	3.50	300.00
WVF1	13.50					
WVF3	11.50					
WVF2	11.50					



CENT-PENGO	5.50	3.00	70.00

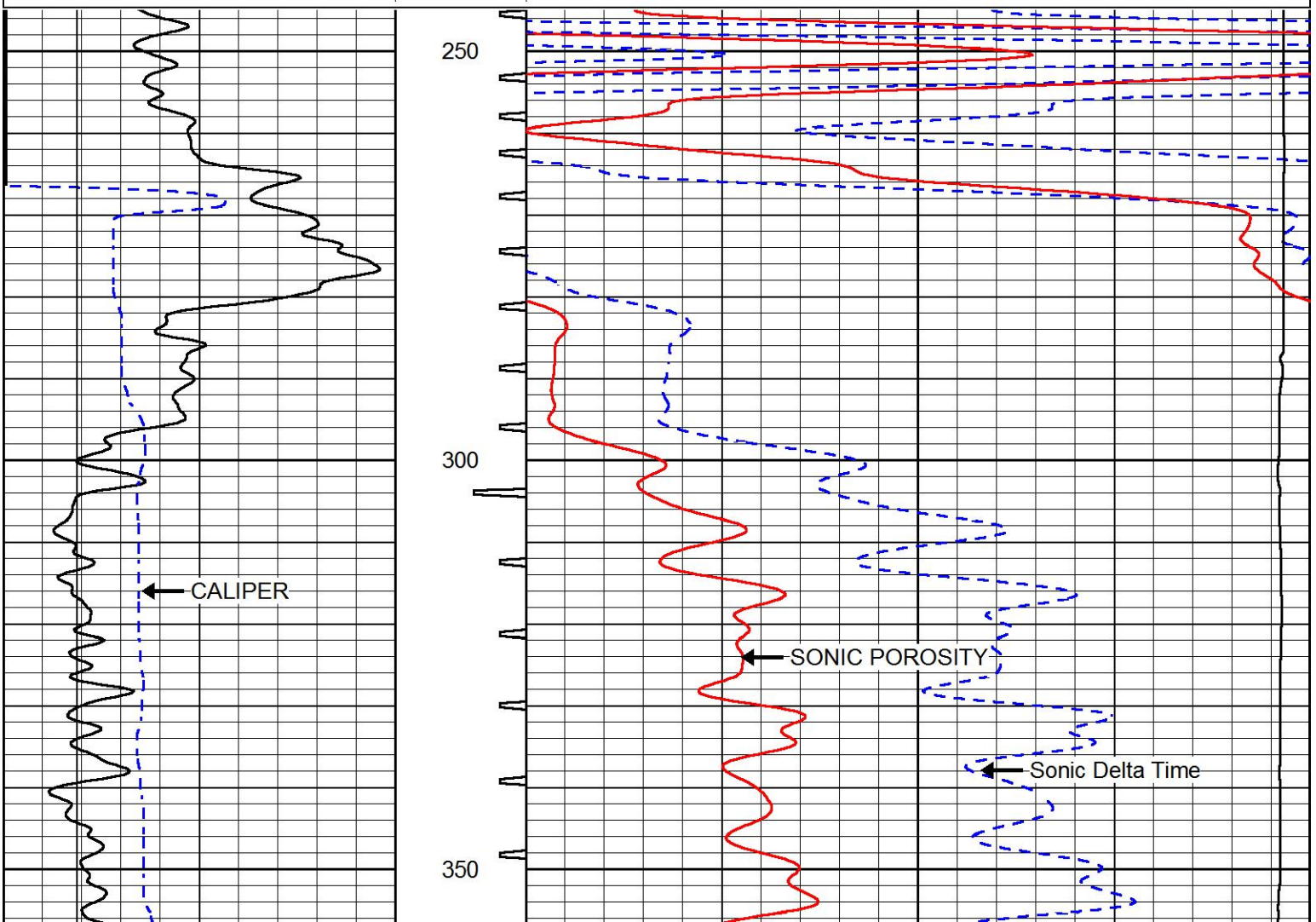
Dataset: marexco_lundgren_32_28.db: field/well/sonmel/pass2
Total length: 26.50 ft
Total weight: 470.00 lb
O.D.: 3.50 in

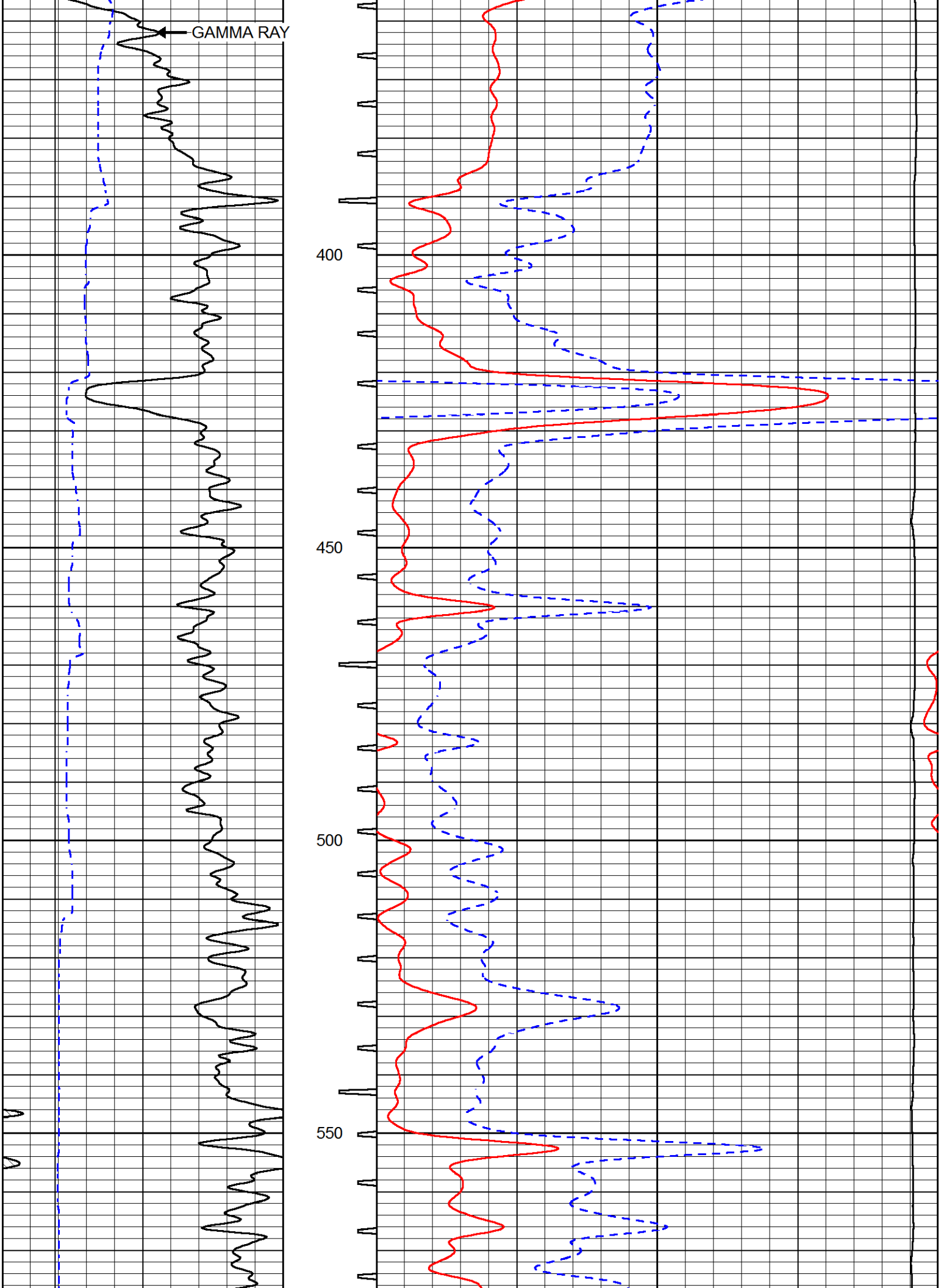
PIONEER
Pioneer Energy Services

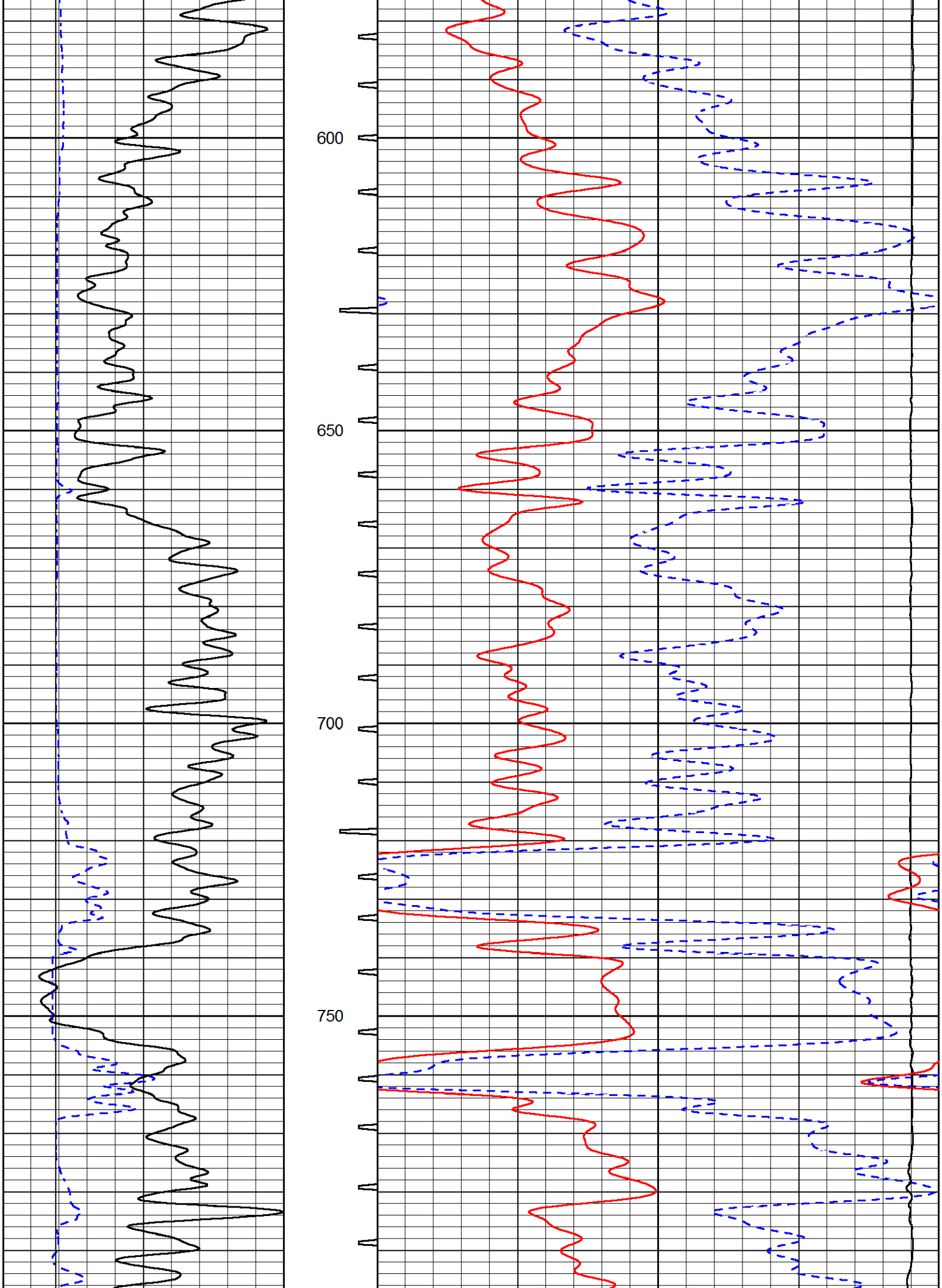
MAIN PASS

Database File	marexco_lundgren_32_28.db
Dataset Pathname	pass4.1
Presentation Format	sonic
Dataset Creation	Thu Jan 10 06:40:50 2019
Charted by	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	SONIC INT TRAVEL TIME (msec)	140	DELTA TIME (usec/ft) (usec/ft) 40
6	CALIPER (in)	16		30	SONIC POROSITY (pu) -10
6	BIT SIZE	16		15000	LINE TENSION (lb) 0




GAMMA RAY
400
450
500
550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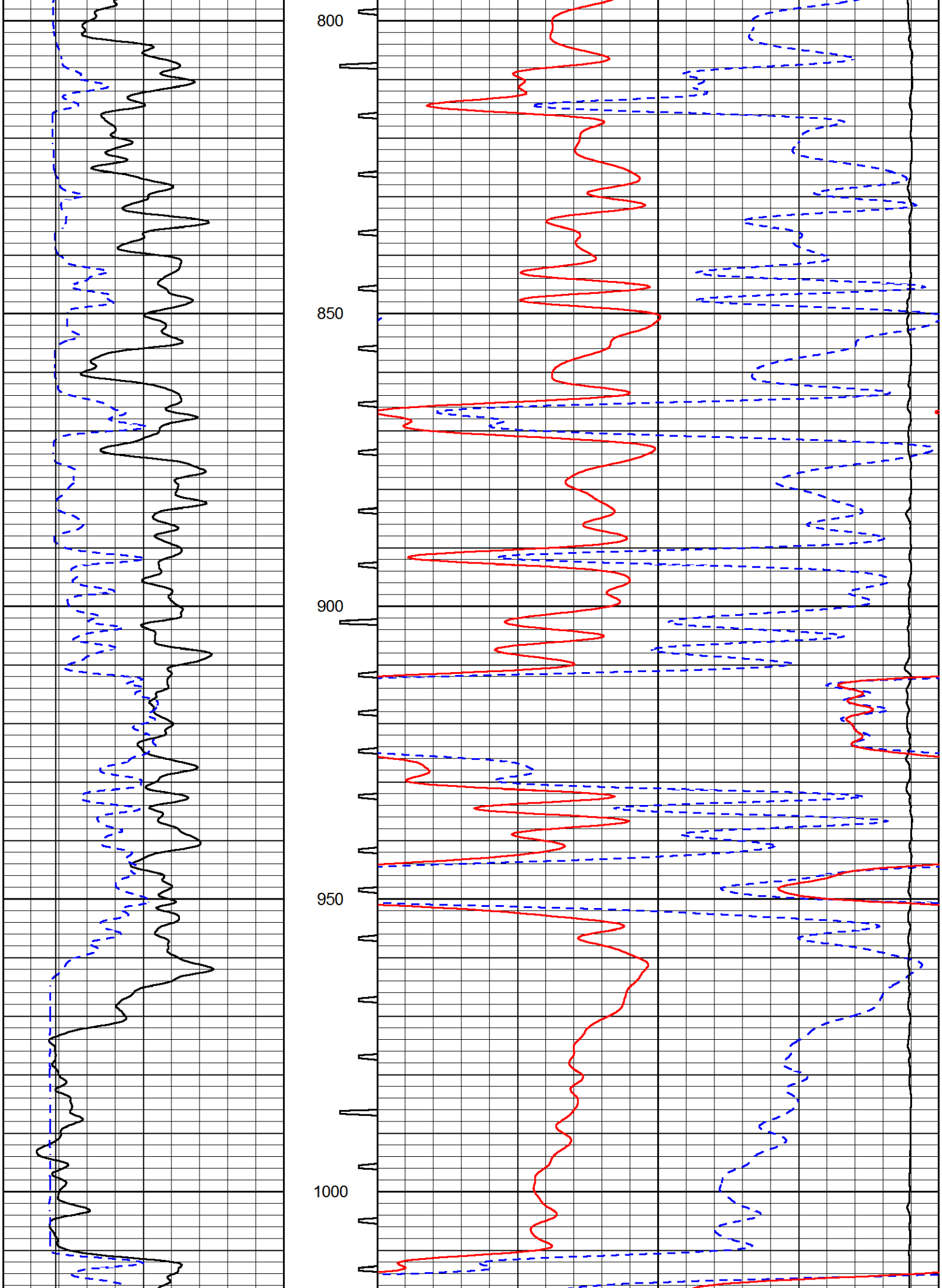
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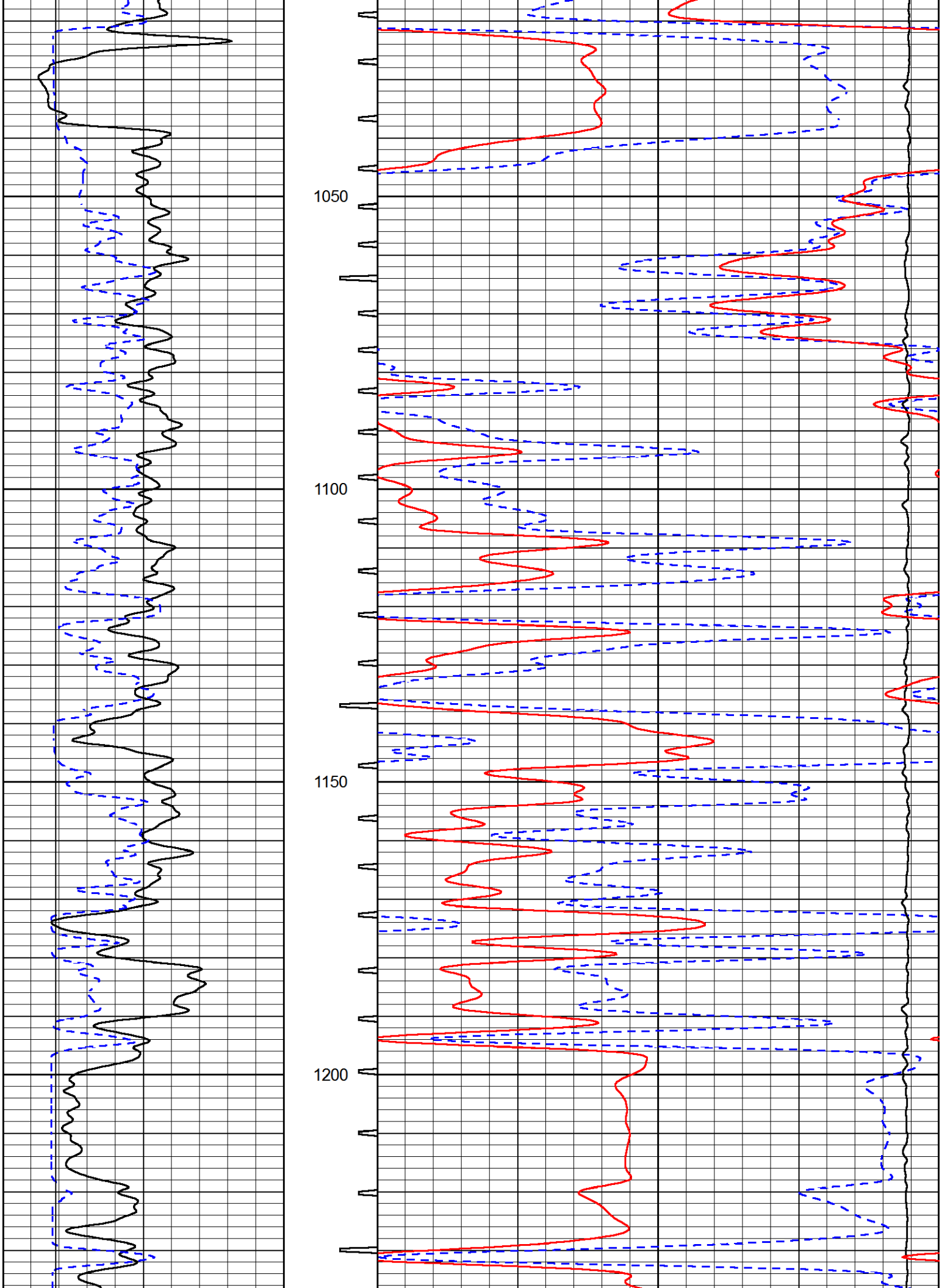
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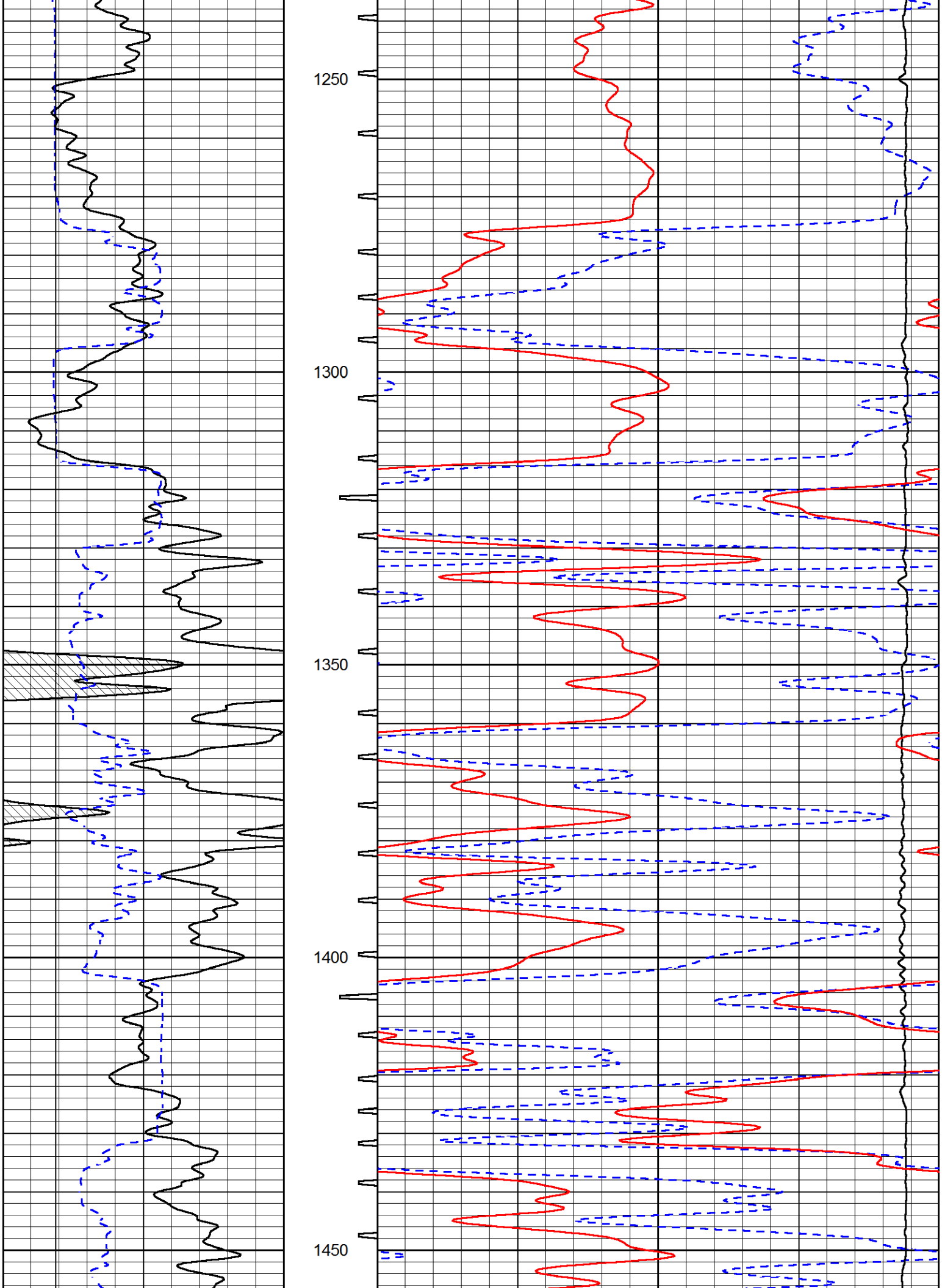
1200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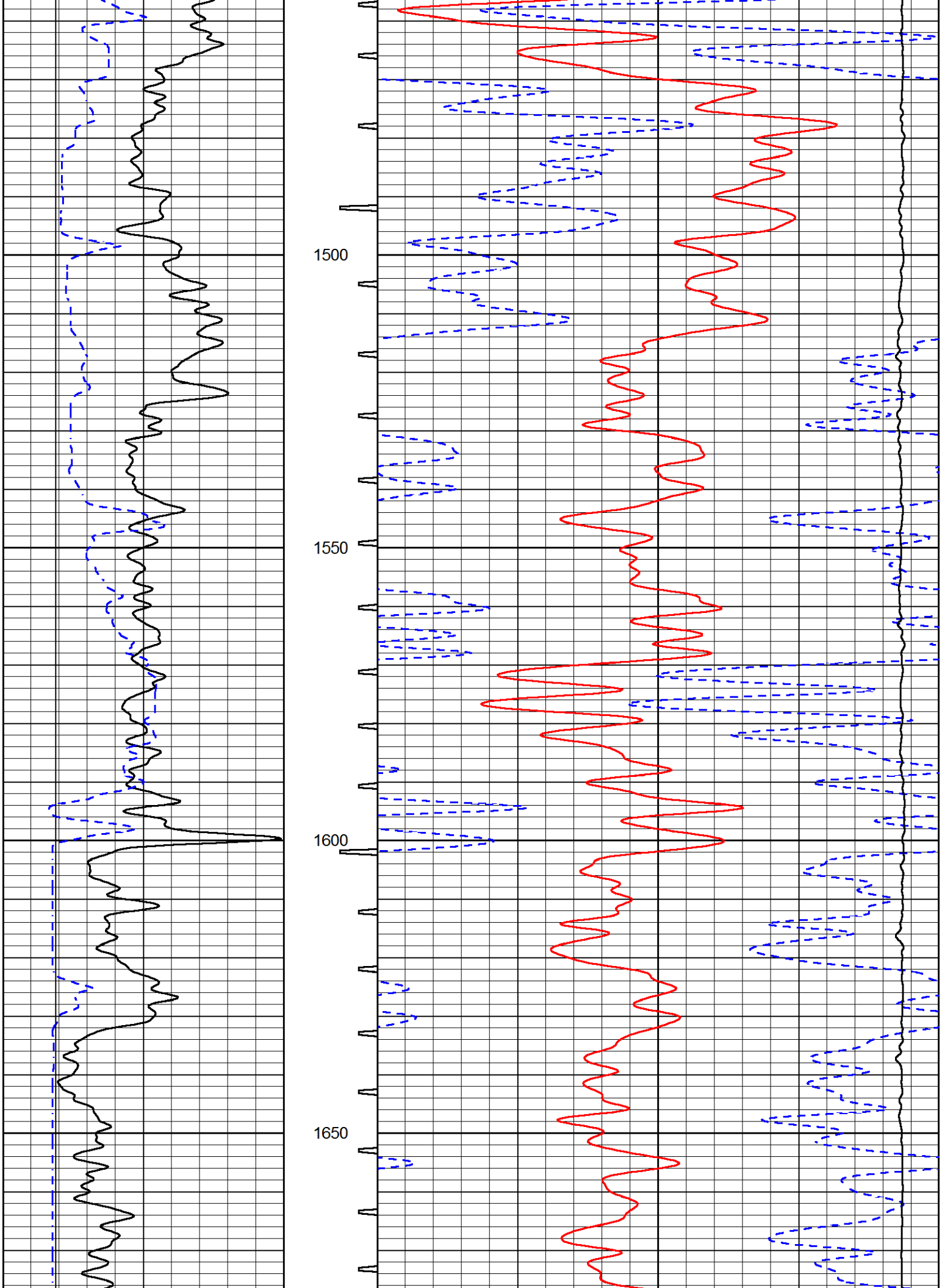
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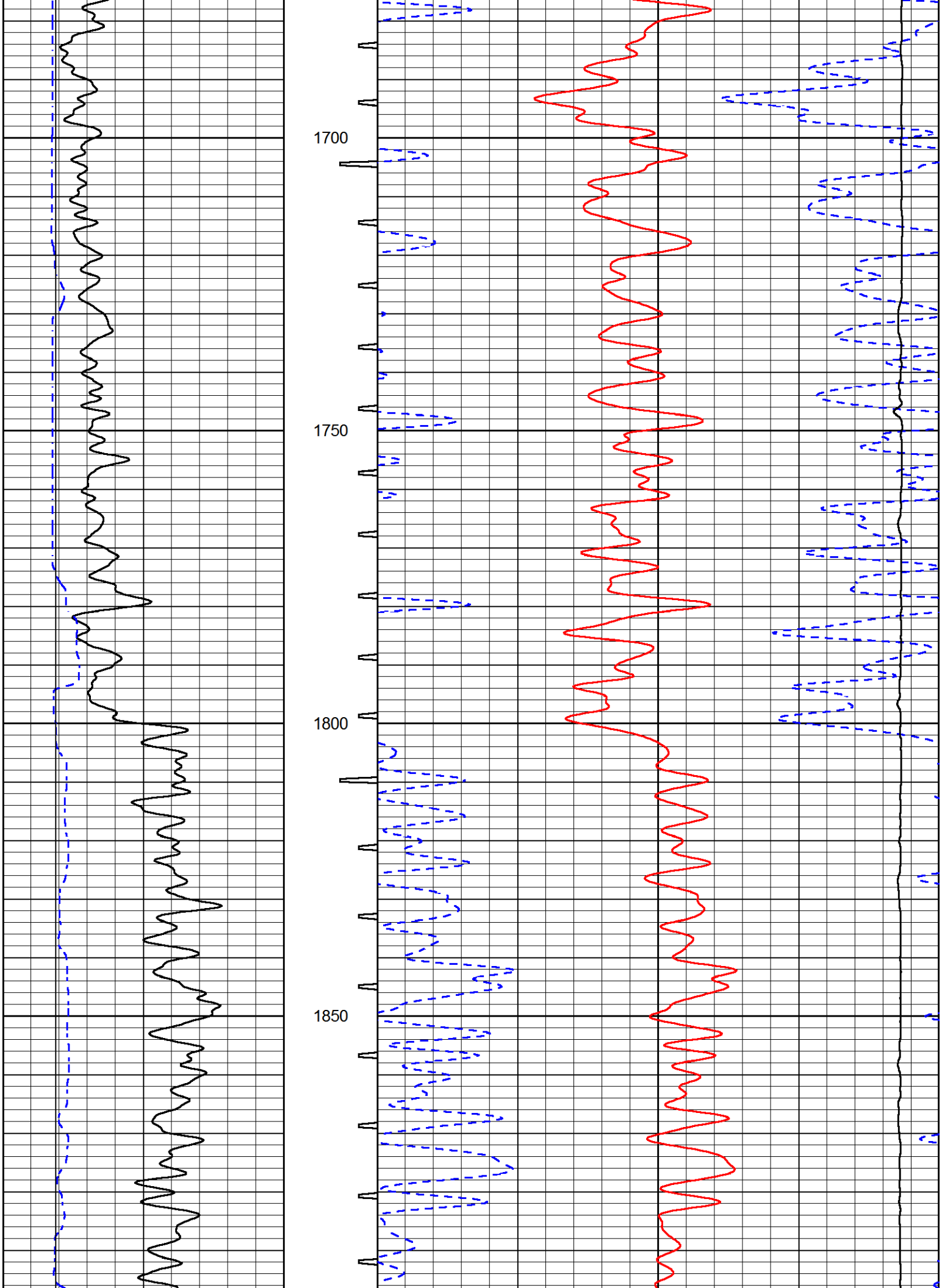
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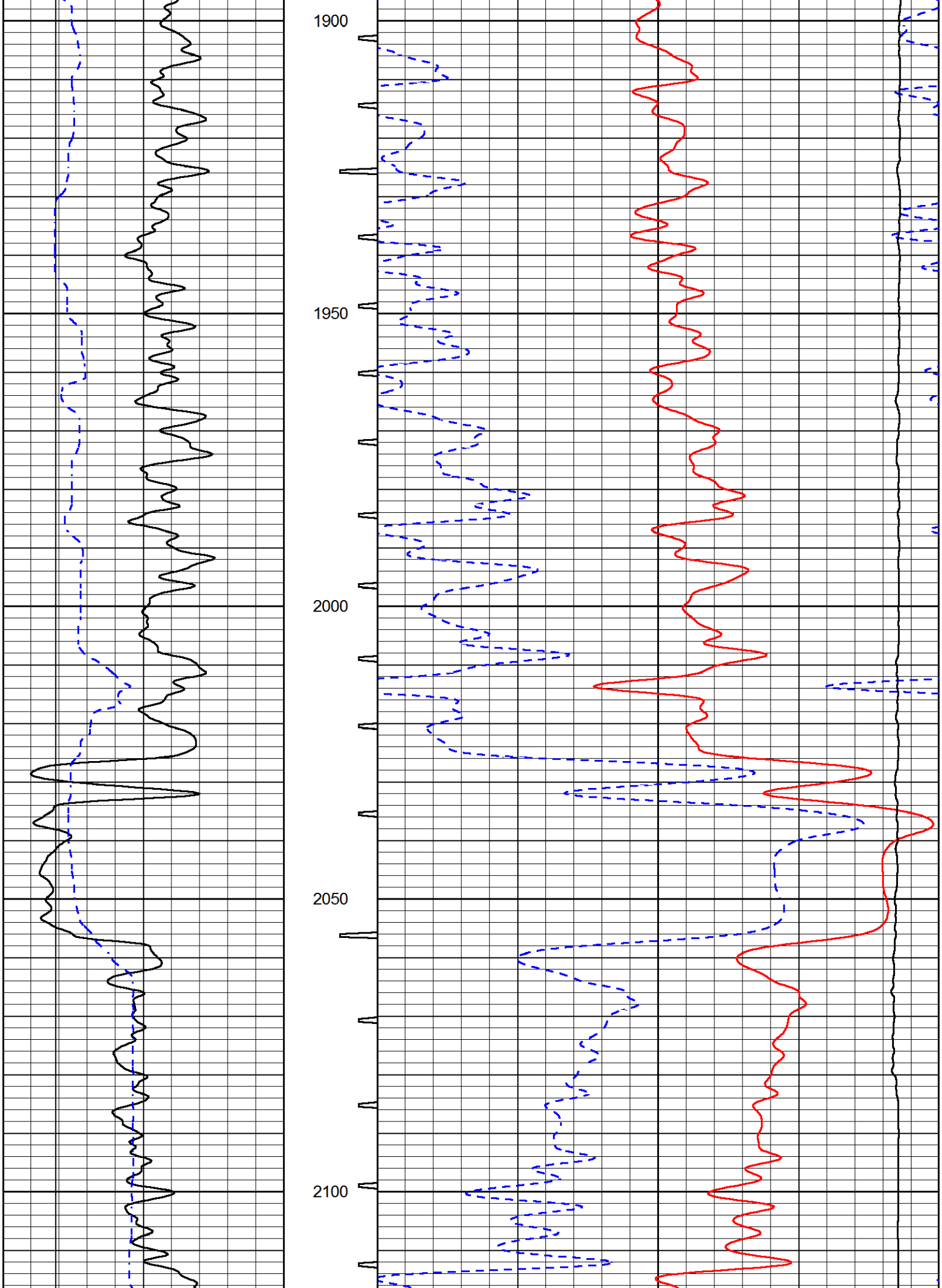
1850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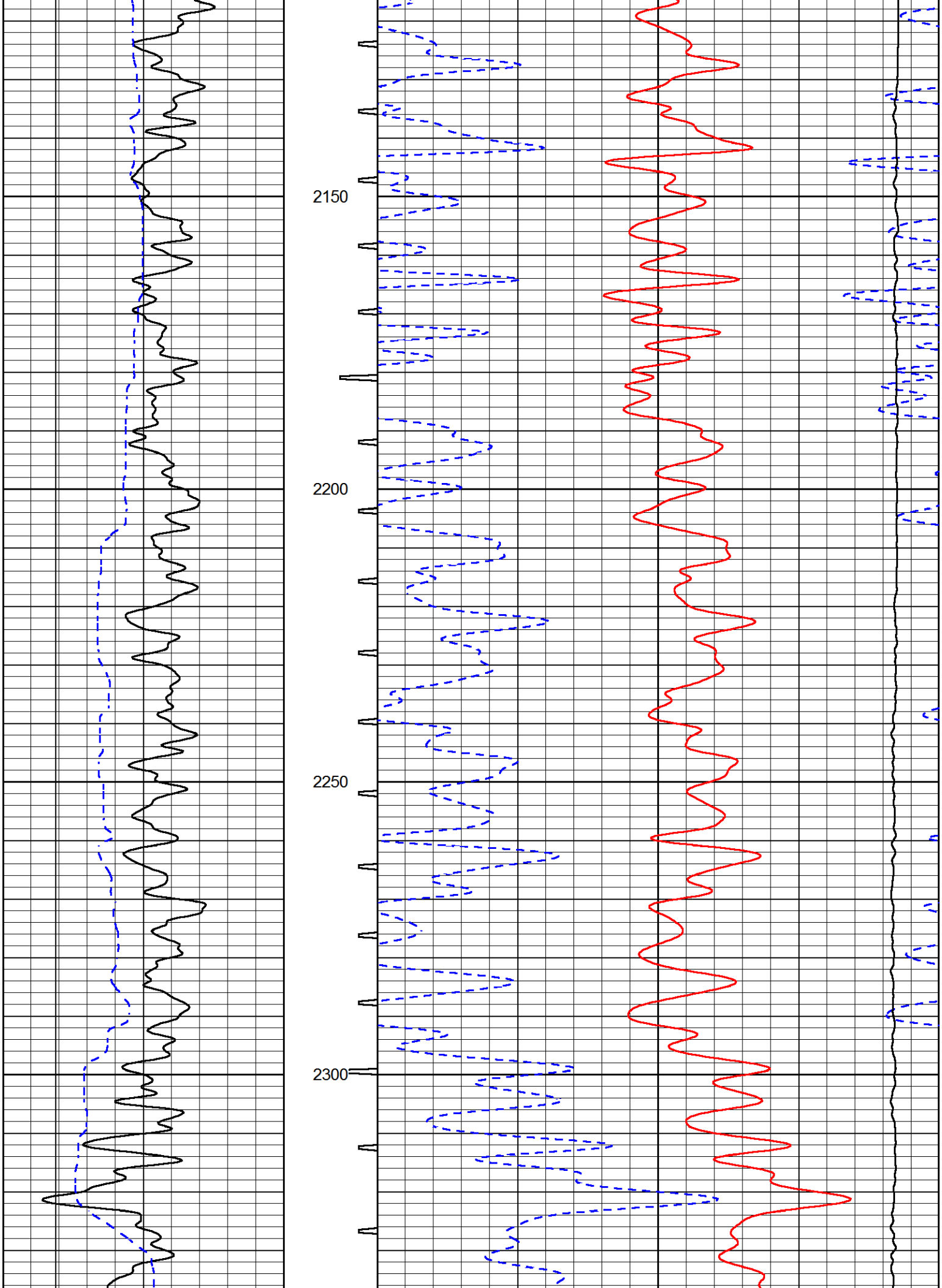
2100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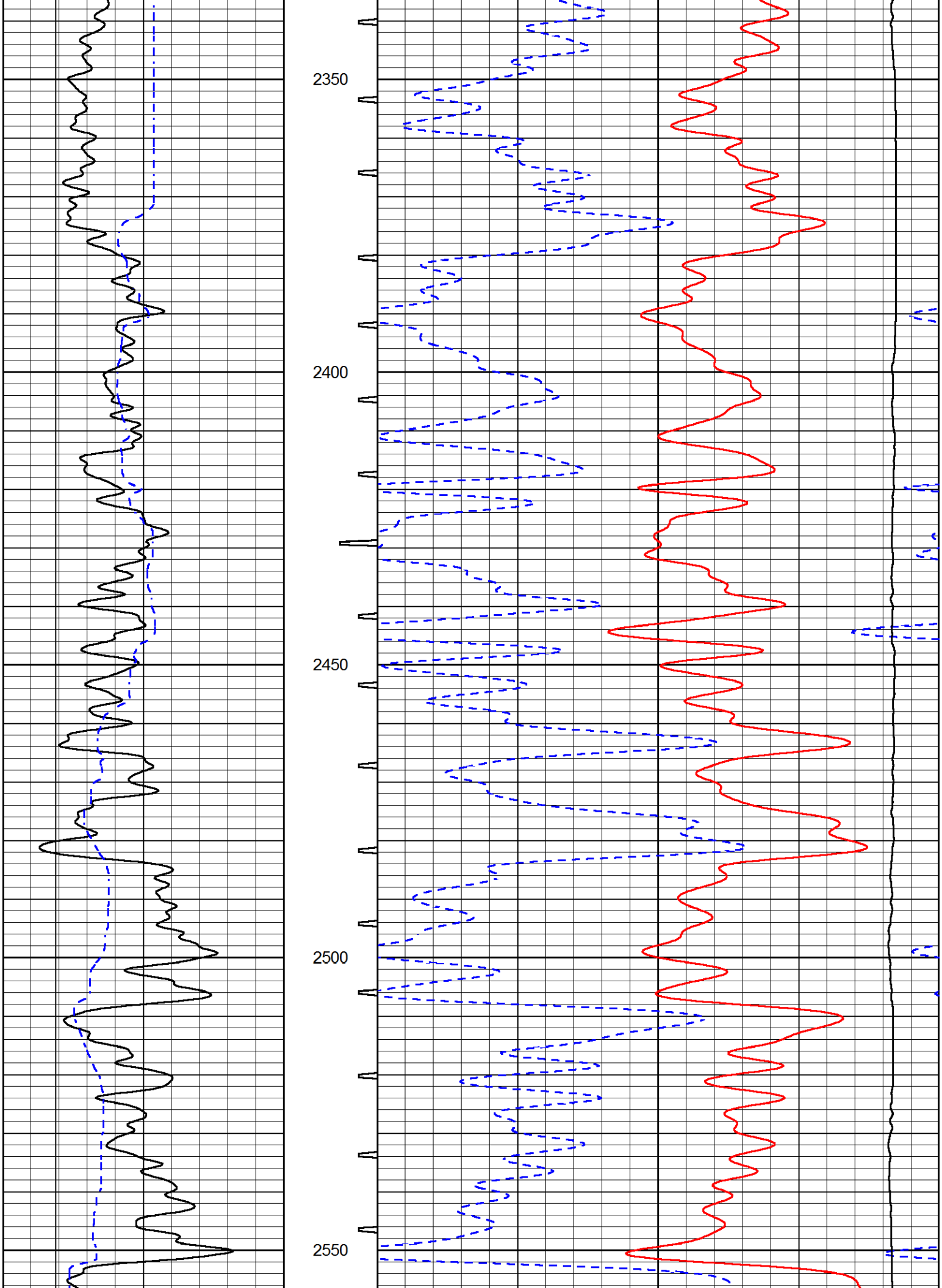
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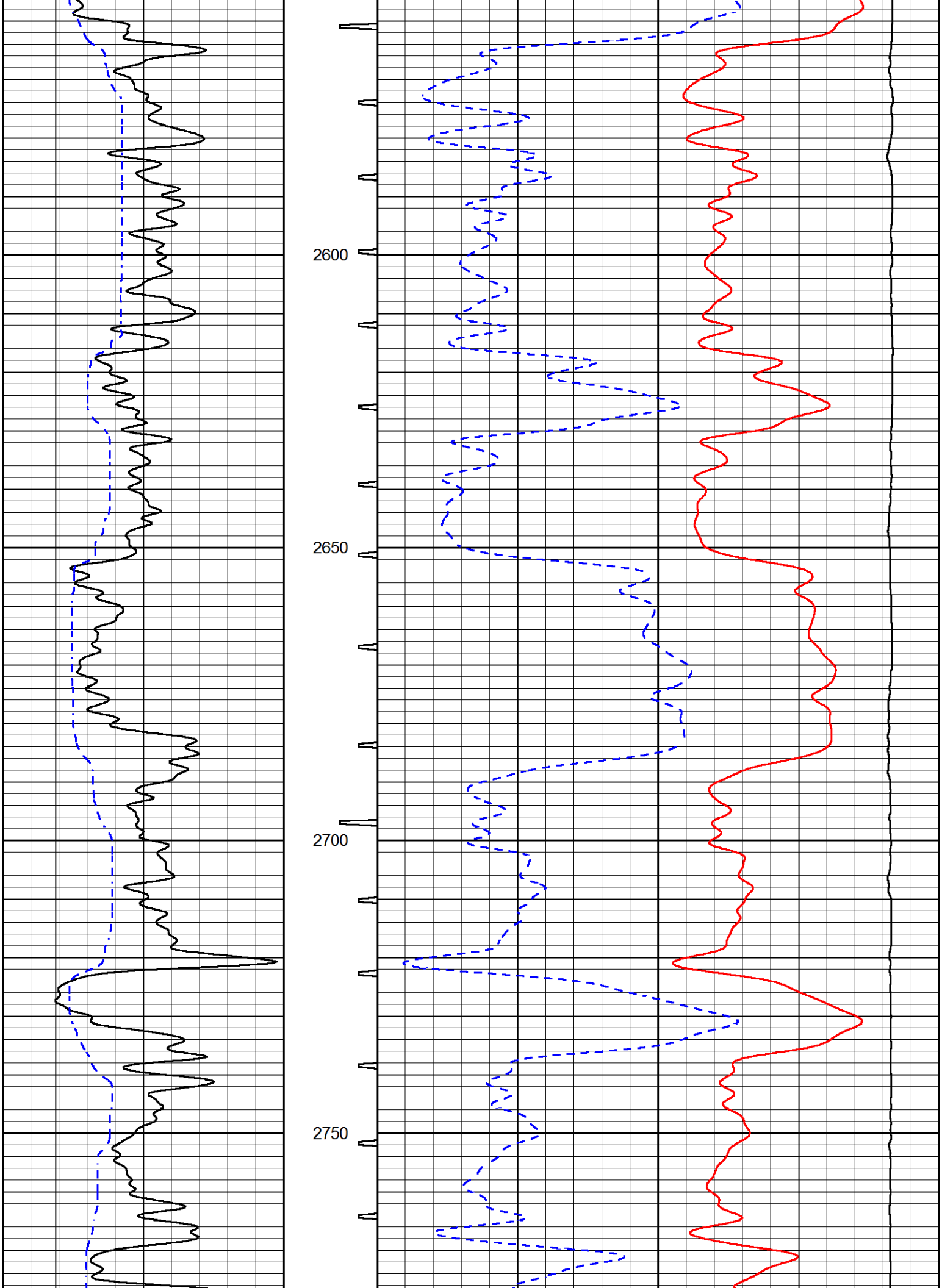
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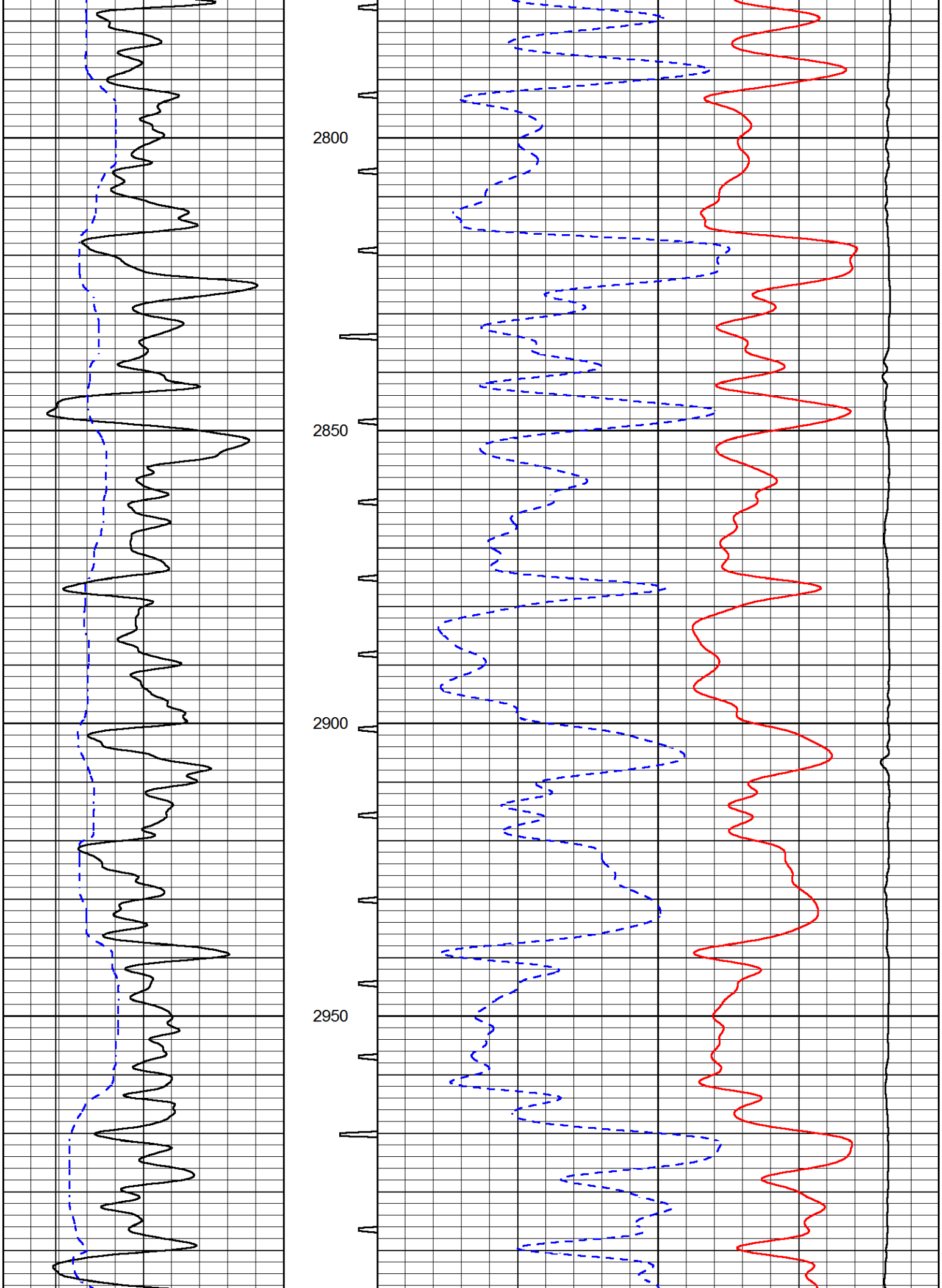
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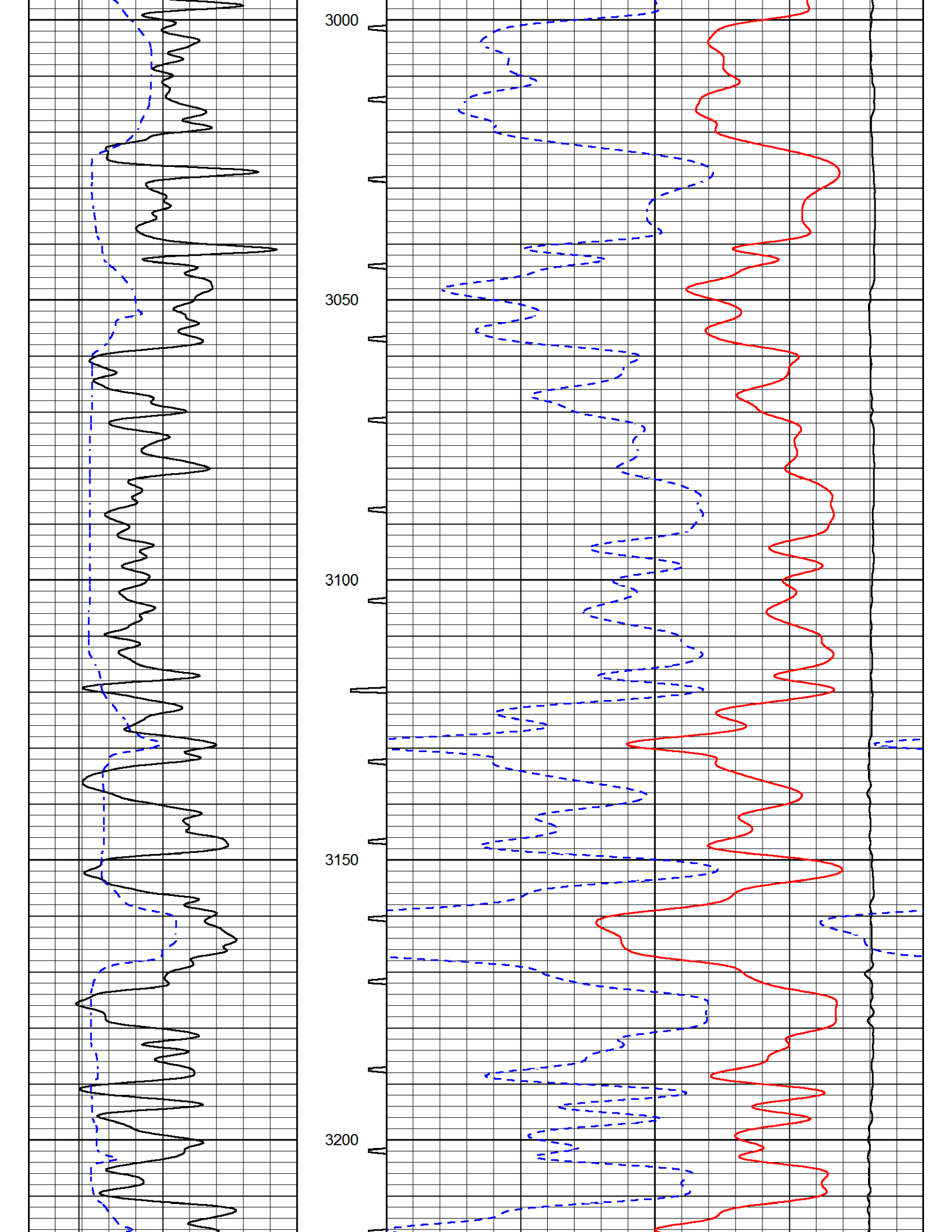
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3150
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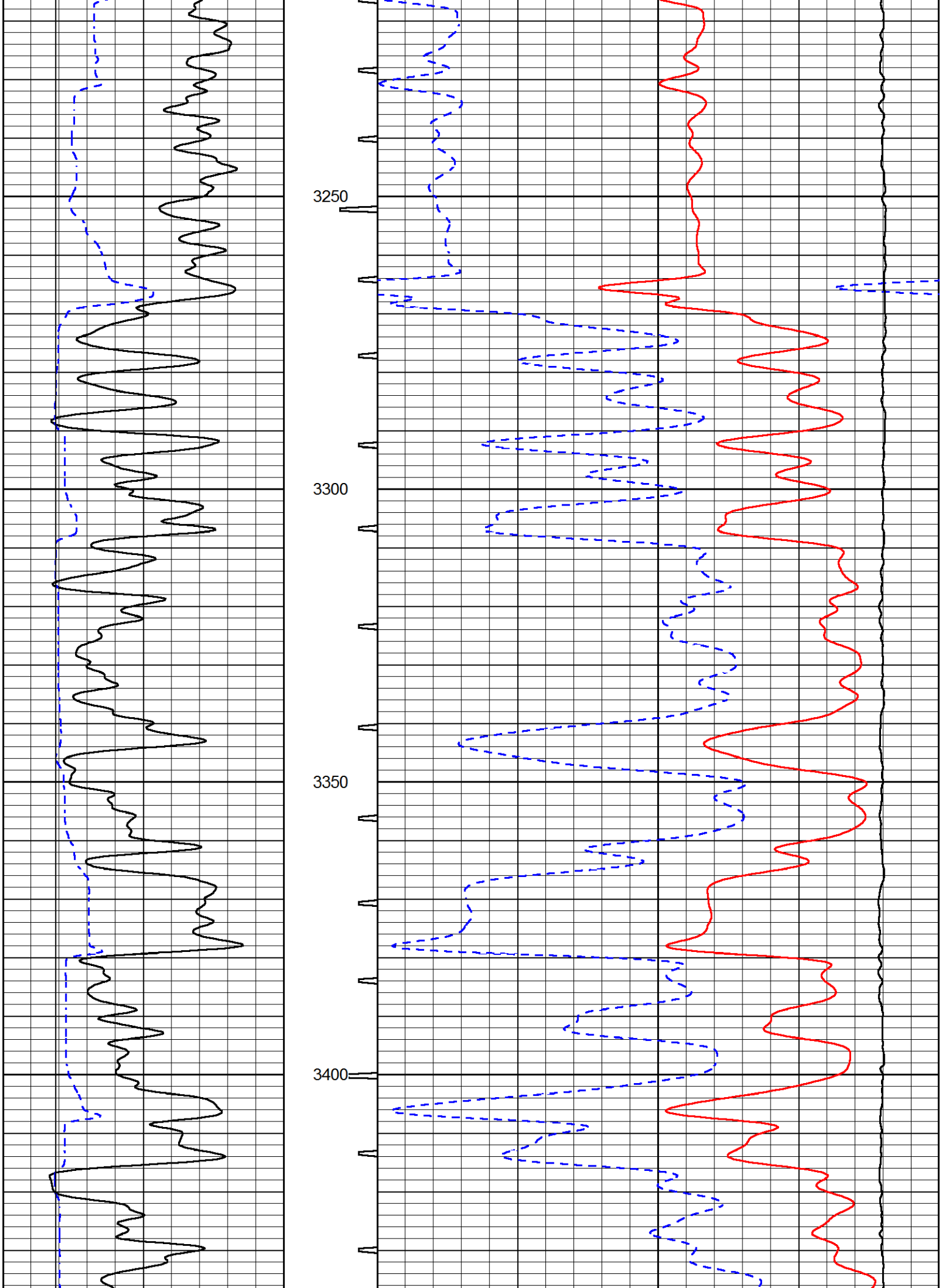
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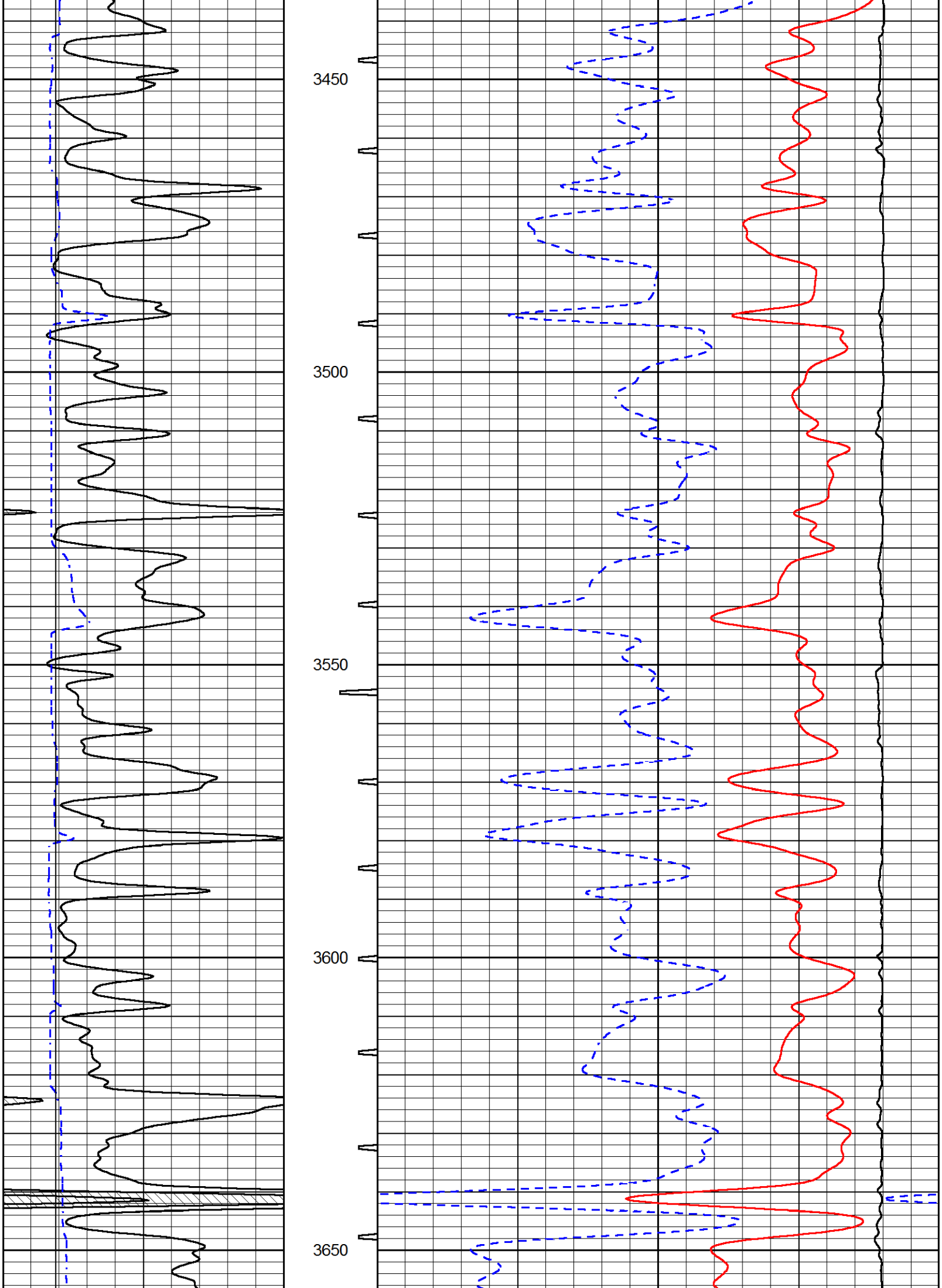
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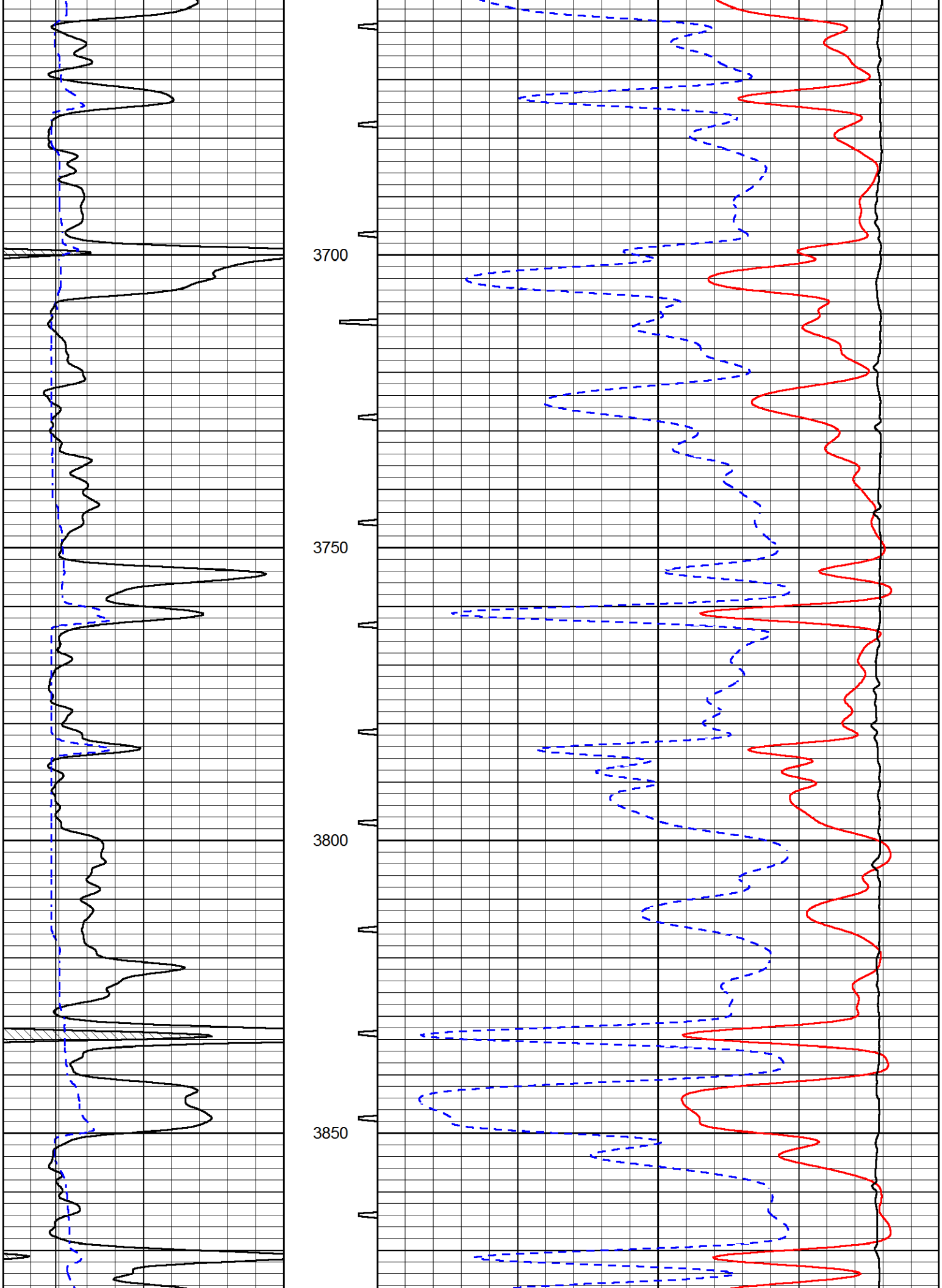
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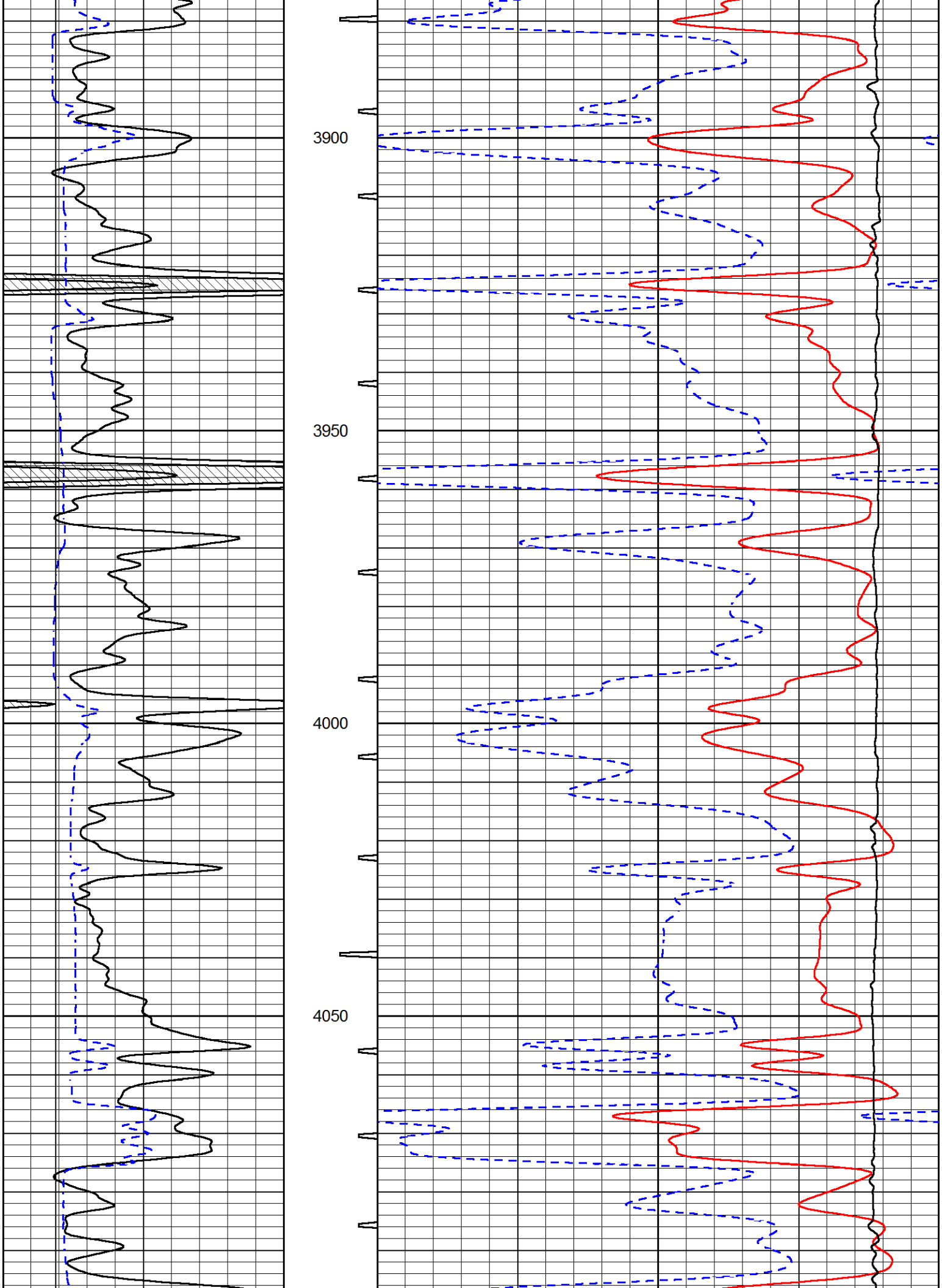
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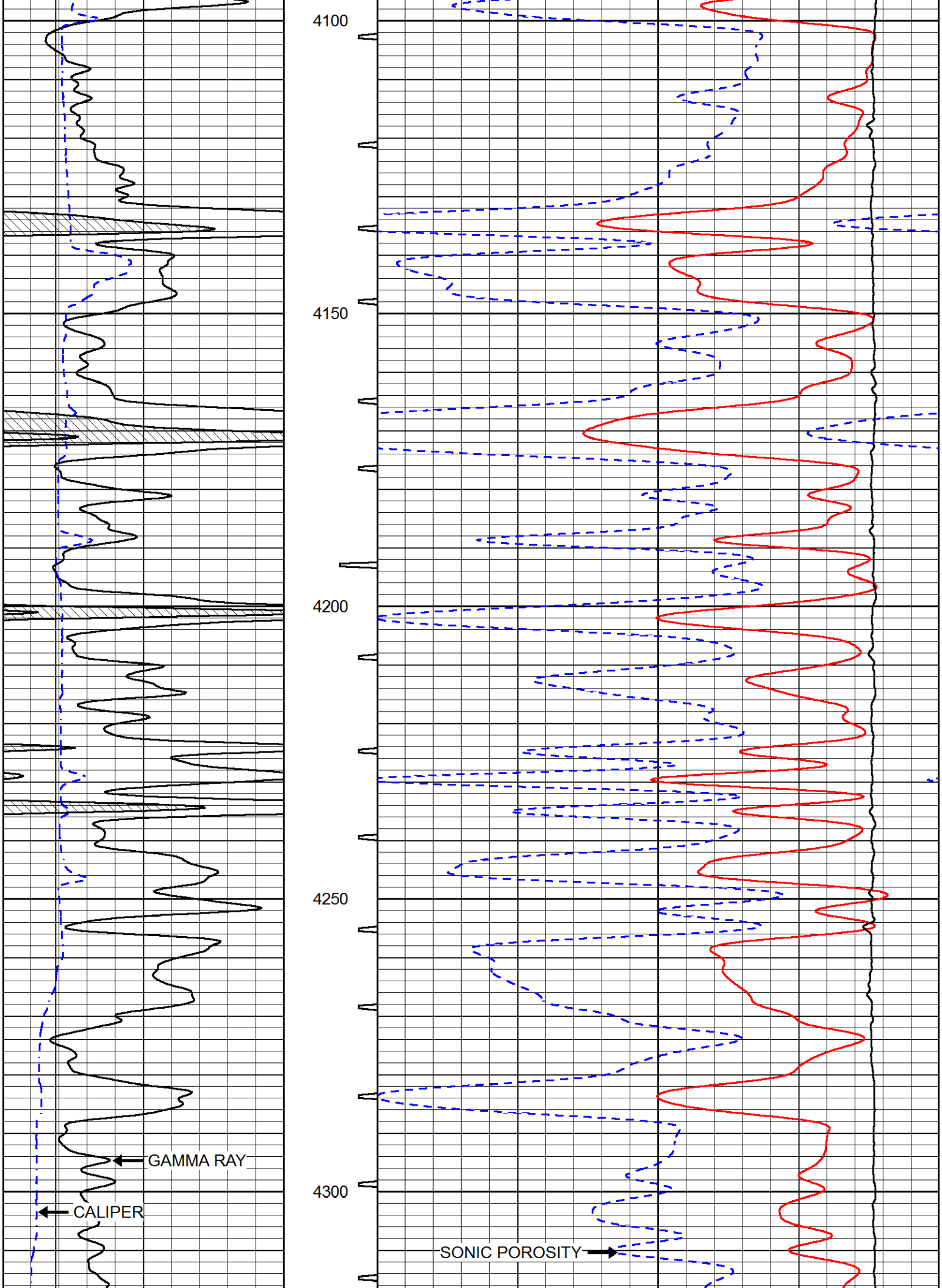
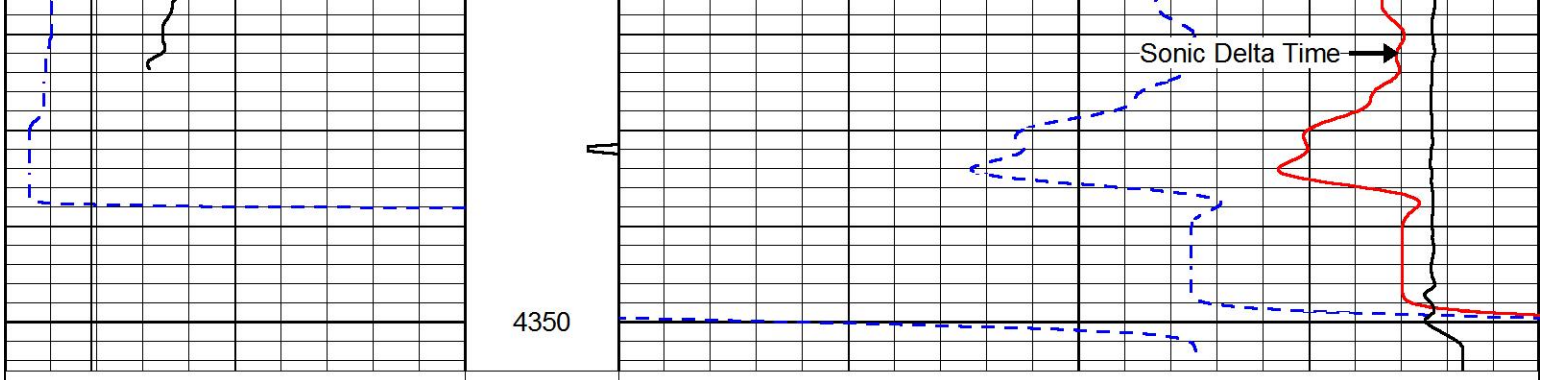

4100
4150
4200
4250
4300
GAMMA RAY
CALIPER
SONIC POROSITY



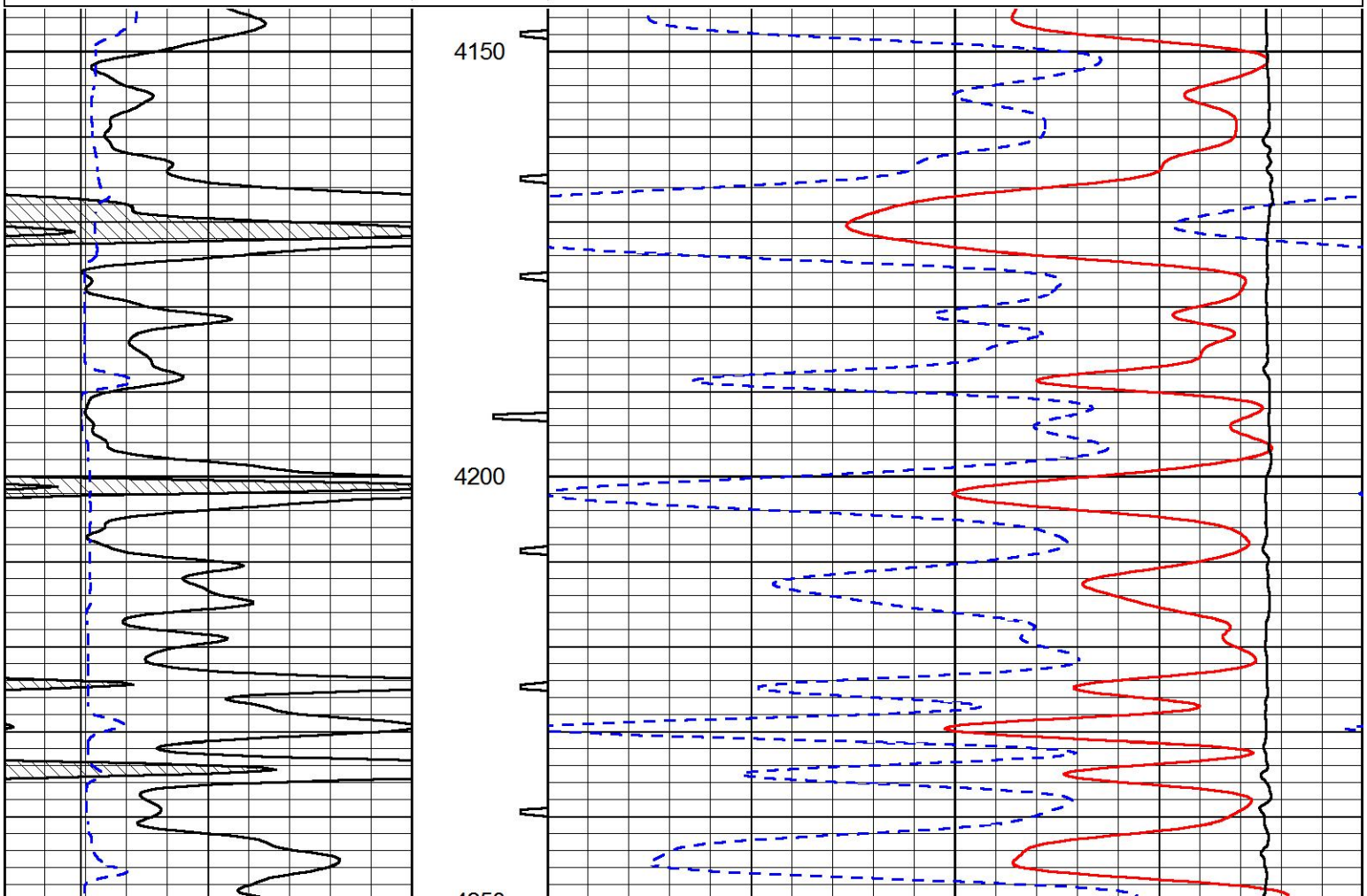
0	GAMMA RAY (GAPI)	150	SONIC INT TRAVEL TIME (msec)	140	DELTA TIME (usec/ft) (usec/ft)	40
6	CALIPER (in)	16		30	SONIC POROSITY (pu)	-10
6	BIT SIZE	16		15000	LINE TENSION (lb)	0

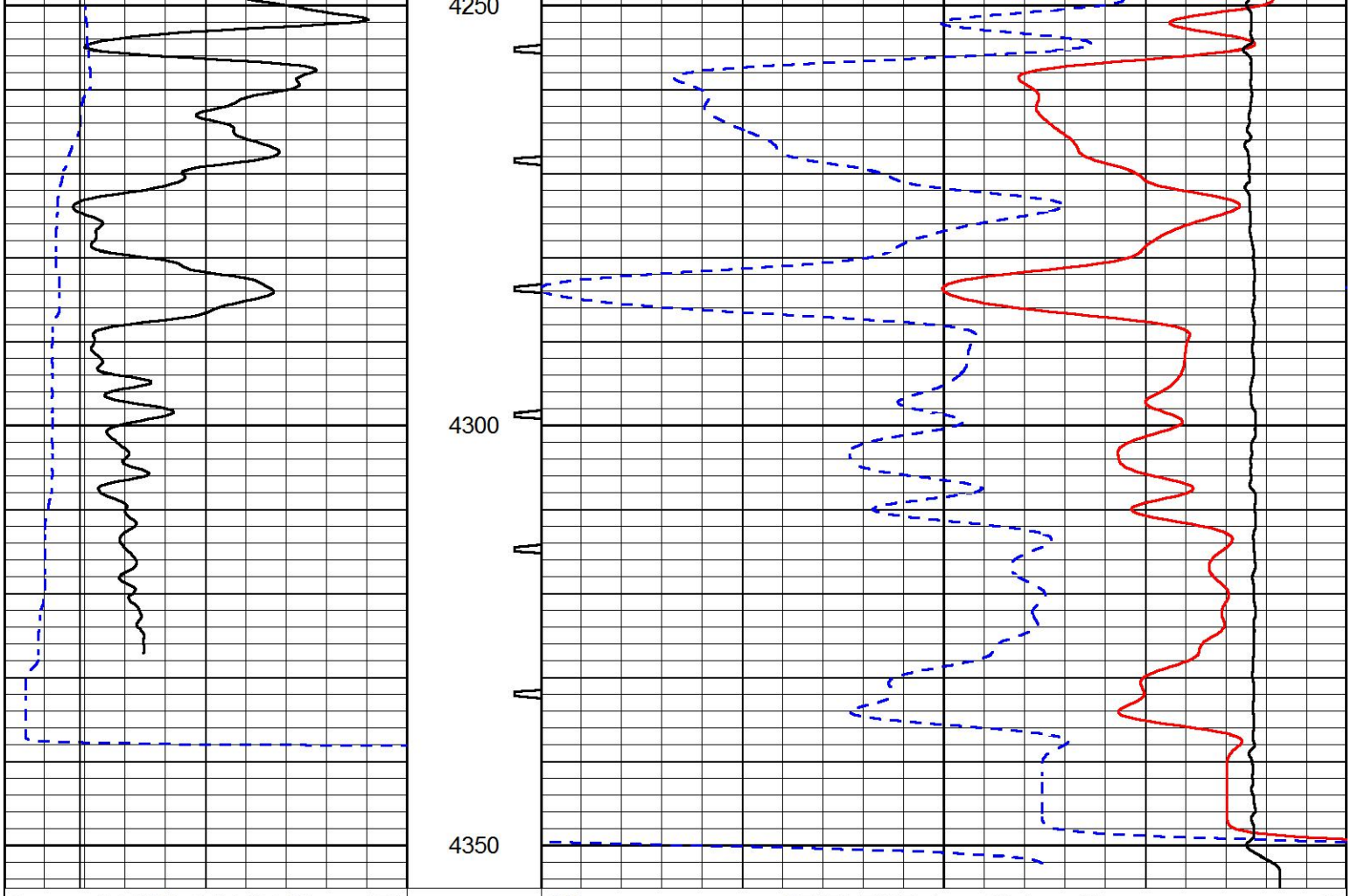
PIONEER
Pioneer Energy Services

REPEAT SECTION

Database File	marexco_lundgren_32_28.db
Dataset Pathname	pass3.1
Presentation Format	sonic
Dataset Creation	Thu Jan 10 06:11:37 2019
Charted by	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	SONIC INT TRAVEL TIME (msec)	140	DELTA TIME (usec/ft) (usec/ft)	40
6	CALIPER (in)	16		30	SONIC POROSITY (pu)	-10
6	BIT SIZE	16		15000	LINE TENSION (lb)	0





PIONEER
Pioneer Energy Services

Company	MAREXCO, INC
Well	LUNDGREN NO.32-28
Field	LUNDGREN EAST
County	GOVE
State	KANSAS

Summary of Changes

Lease Name and Number: LUNDGREN 32-28

API/Permit #: 15-063-22343-00-00

Doc ID: 1460416

Correction Number: 1

Approved By: Karen Ritter

Field Name	Previous Value	New Value
Approved Date	05/08/2019	05/17/2019
Save Link	../../kcc/detail/operatorEditDetail.cfm?docID=1459744	../../kcc/detail/operatorEditDetail.cfm?docID=1460416

Summary of Attachments

Lease Name and Number: LUNDGREN 32-28

API: 15-063-22343-00-00

Doc ID: 1460416

Correction Number: 1

Attachment Name