



DUAL INDUCTION LOG

PIONEER
Pioneer Energy Services

Company RAMA OPERATING CO. INC.
Well REWERTS #1-27
Field BEDFORD
County STAFFORD
State KANSAS

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Field BEDFORD
County STAFFORD State KANSAS

Location: API #: 15-185-24041-00-00

Other Services

SEC 27 TWP 23S RGE 12W
2185' FNL & 330' FWL

CNL/CDL
MEL

Permanent Datum GROUND LEVEL Elevation 1859'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 1870'
D.F. N/A
G.L. 1859'

Date 12/1/2018

Run Number	ONE		
Depth Driller	3915'		
Depth Logger	3913'		
Bottom Logged Interval	3912'		
Top Log Interval	280'		
Casing Driller	8.625" @ 307'		
Casing Logger	307'		
Bit Size	7.875"		
Type Fluid in Hole	CHEMICAL		
Salinity, ppm CL	9100		
Density / Viscosity	9.3 67		
pH / Fluid Loss	9.5 11.2		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.50 @ 71		
Rmt @ Meas. Temp	1.13 @ 71		
Rmc @ Meas. Temp	2.03 @ 71		
Source of Rmt / Rmc	CHARTS		
Rm @ BHT	0.92 @ 115		
Operating Rig Time	3 HOURS		
Max Rec. Temp. F	115		
Equipment Number	108		
Location	HAYS		
Recorded By	IAN MABB		
Witnessed By	JOSH AUSTIN		

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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.

STAFFOR, KS.

5 MILES NORTH, 2 MILES WEST, 1/2 SOUTH,
EAST INTO

Log Measured From: KELLY BUSHING

11 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES

www.pioneerenergy.com

785-625-3858

Your Pioneer Energy Services Crew

Engineer: IAN MABB

Operator:

Operator:

Operator:

This Log Record Was Witnessed By

Primary Witness: JOSH AUSTIN

Secondary Witness:

Secondary Witness:

Secondary Witness:

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 115	in 5.5	in 0	g/cc 1	2	g/cc 2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m 0	mmho/m 0	mV 65	degF 0	Off	ft 3913

Sensor	Offset (ft)	Schematic		Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58			GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC	37.48			CNT-M&W (tk10-MW)	5.50	3.50	100.00
CNSSC	36.73						
LSD	28.43			CDL-M&W (934-5002)	8.50	4.00	250.00
DCAL	28.42						
SSD	27.93						
MCAL	19.83			ML-PSI STKBL ML (PSI-01)	7.58	4.00	65.00
				Stackable Microlog Tools			
MI	19.83						
MN	19.83						
RLL3	15.80						
RLL3F	15.79						
CILD	8.00			DIL-M&W (PSI 988)	18.50	3.50	220.00

CILM

4.70

SP

0.20

Dataset: rama_reverts_1_27.db: field/well/stackmel/pass3.1
Total length: 43.08 ft
Total weight: 685.00 lb
O.D.: 4.00 in



MAIN PASS

Database File rama_reverts_1_27.db
Dataset Pathname stackmel/pass4.1
Presentation Format dil2in
Dataset Creation Sat Dec 01 16:42:51 2018
Charted by Depth in Feet scaled 1:600

0 GAMMA RAY (GAPI) 150

2000 CILD (mmho/m) 0

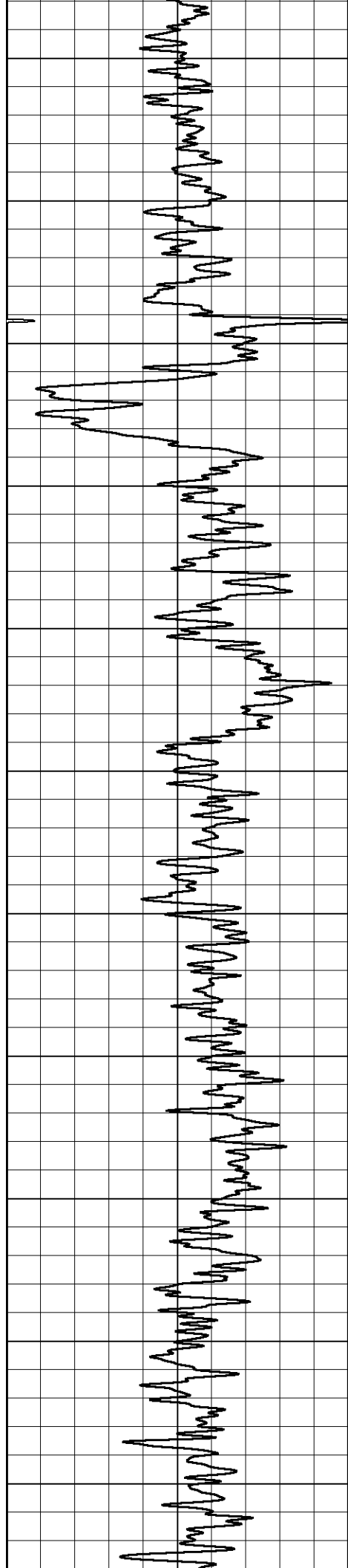
0	RLL3 (Ohm-m)	50
0	DEEP RESISTIVITY (Ohm-m)	50
50	RLL3 (Ohm-m)	500
50	RILD (Ohm-m)	500

GAMMA RAY

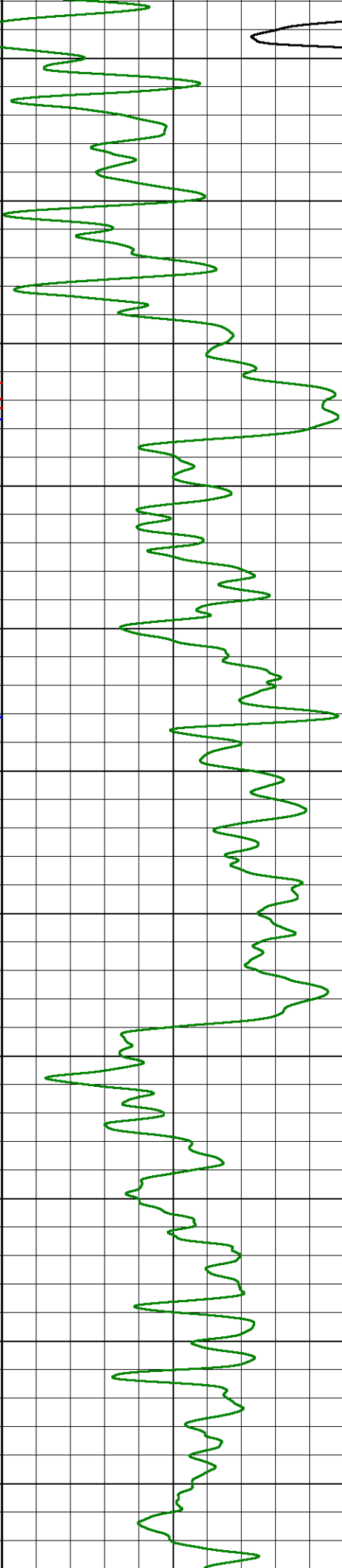
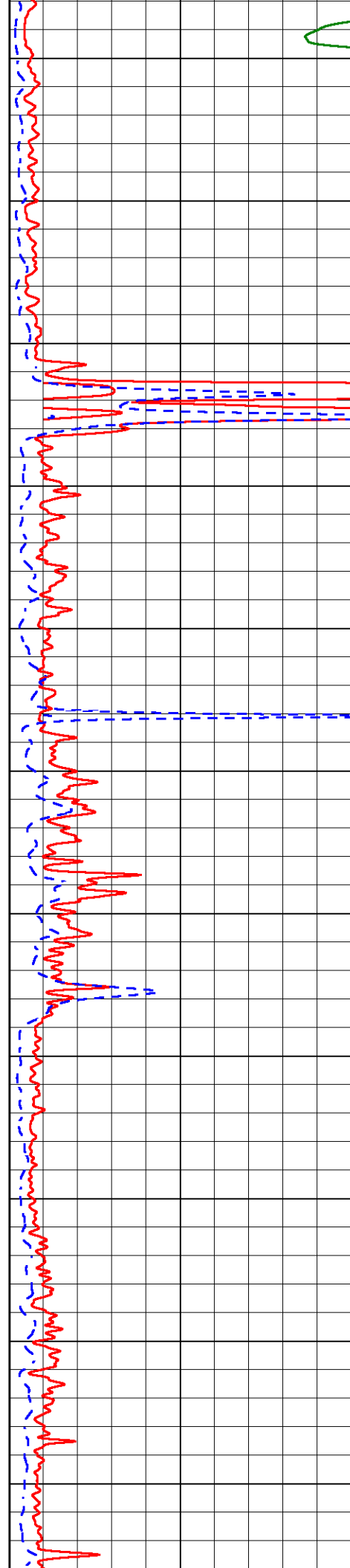
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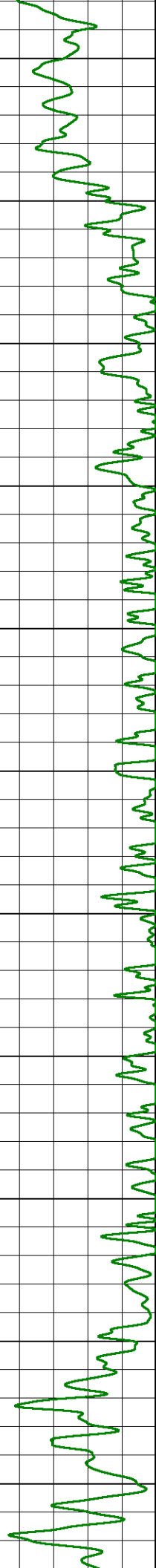
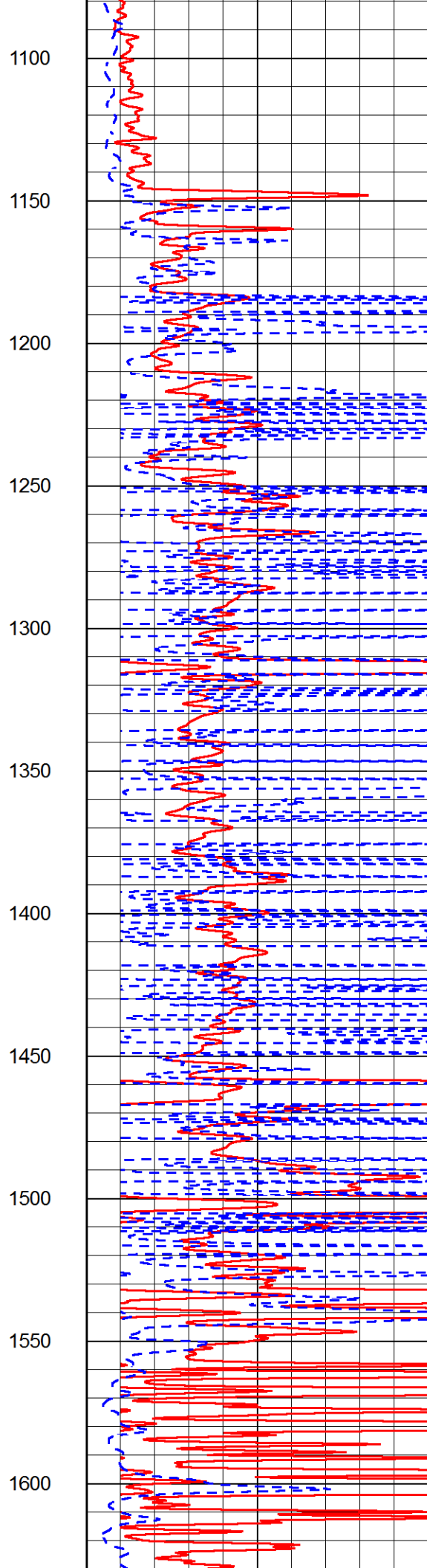
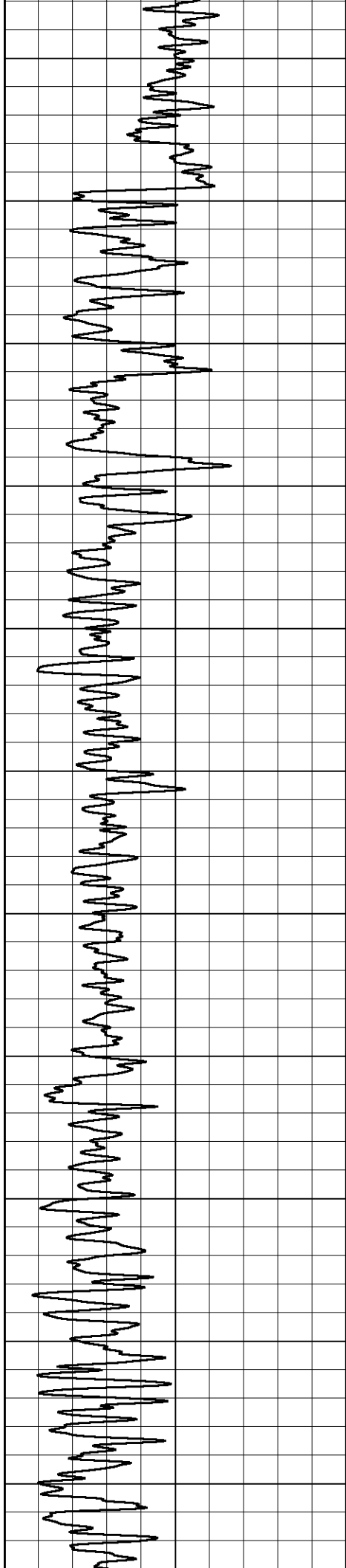
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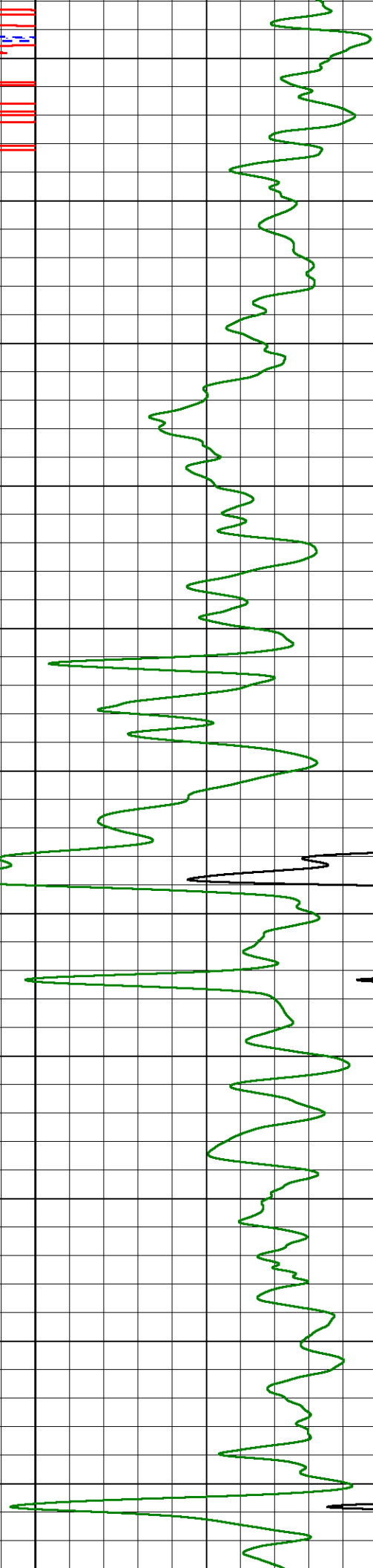
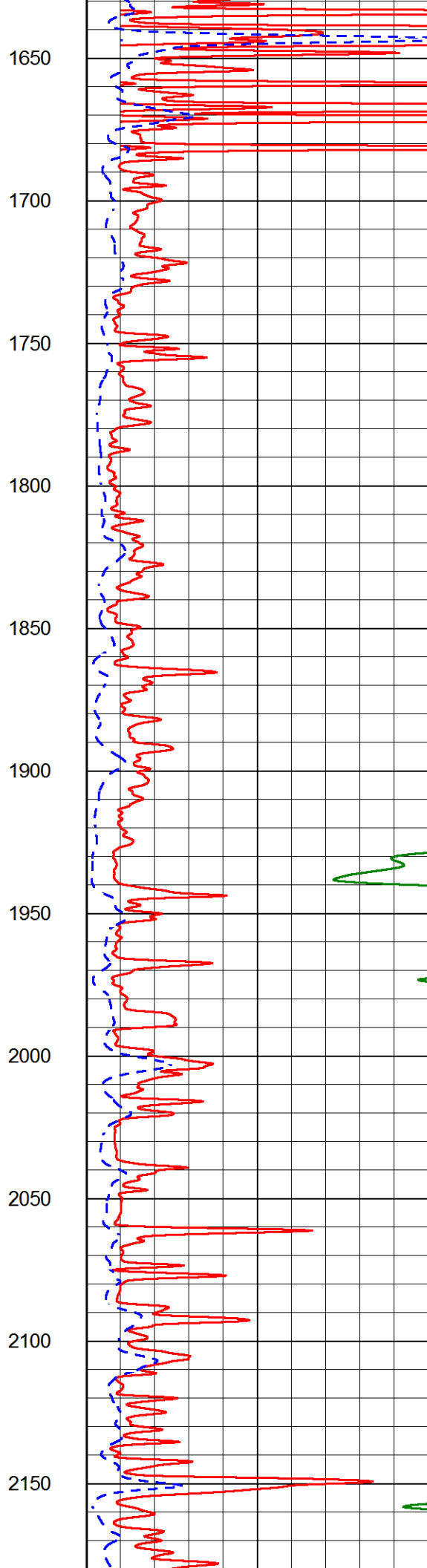
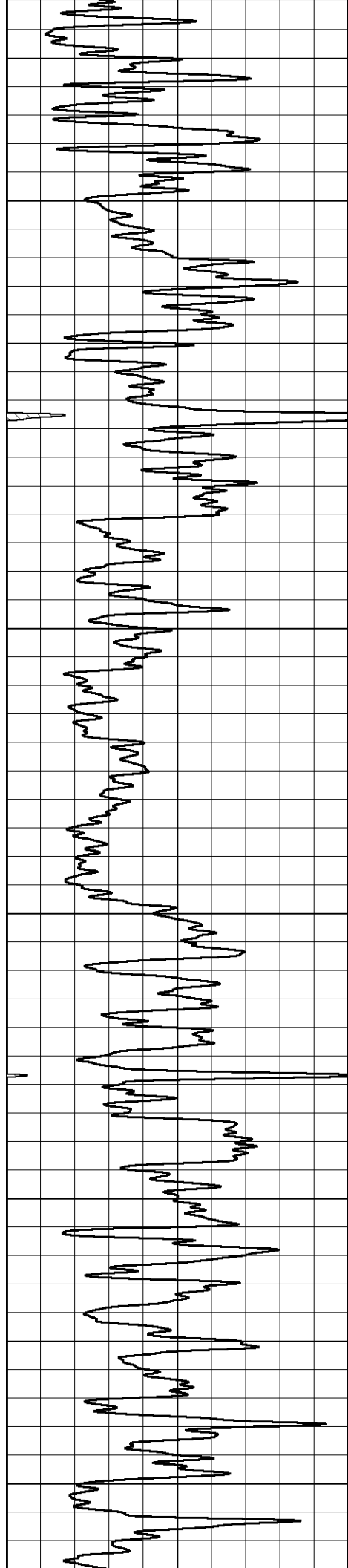
CILD

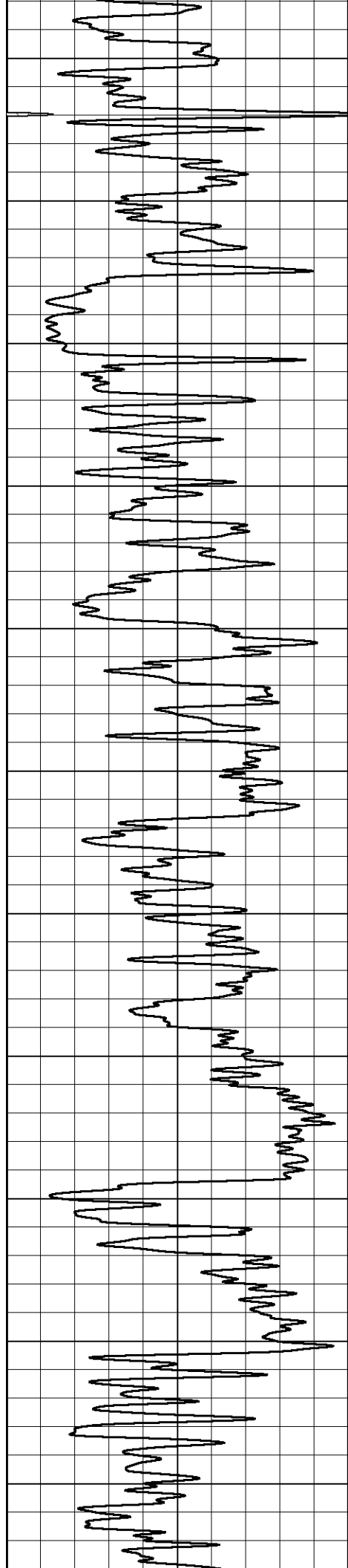


550
600
650
700
750
800
850
900
950
1000
1050









2200

2250

2300

2350

2400

2450

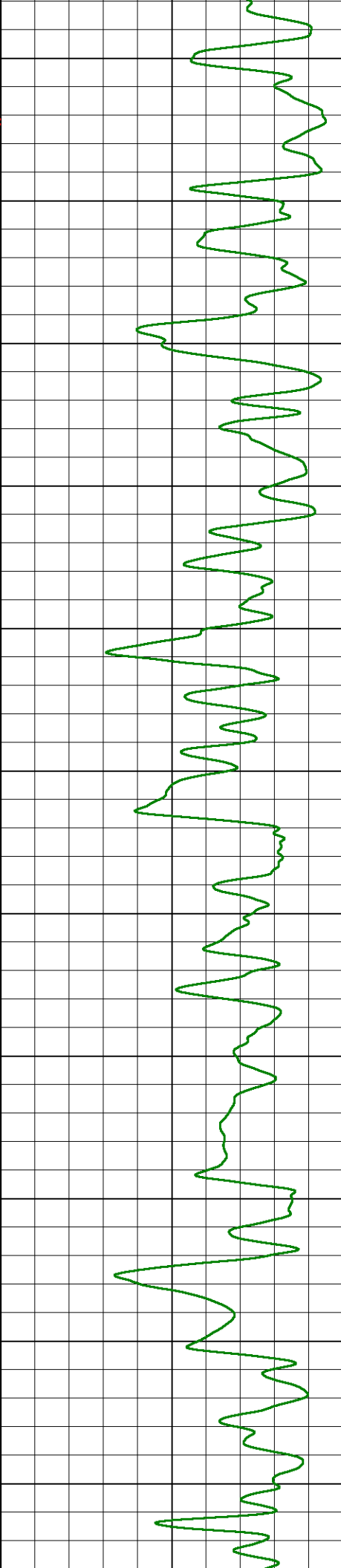
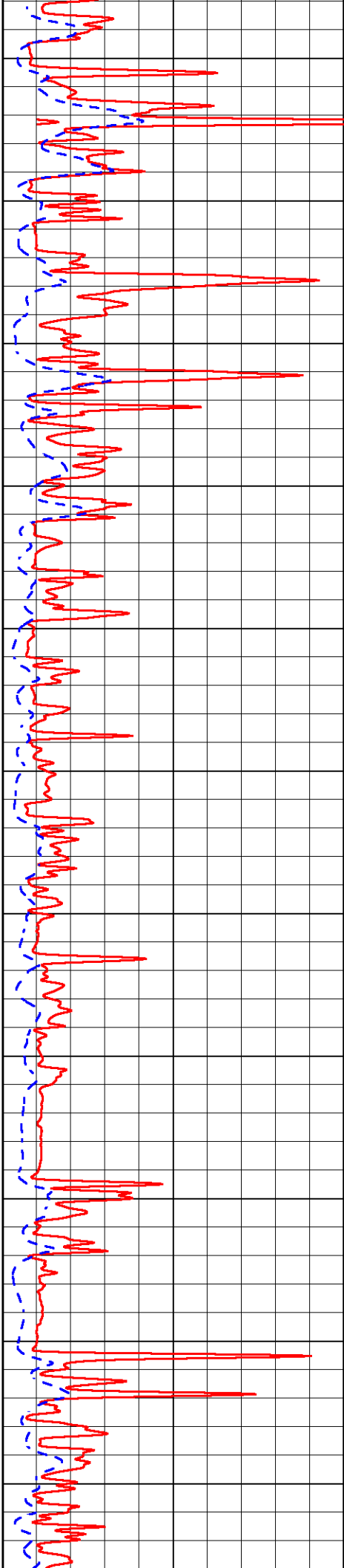
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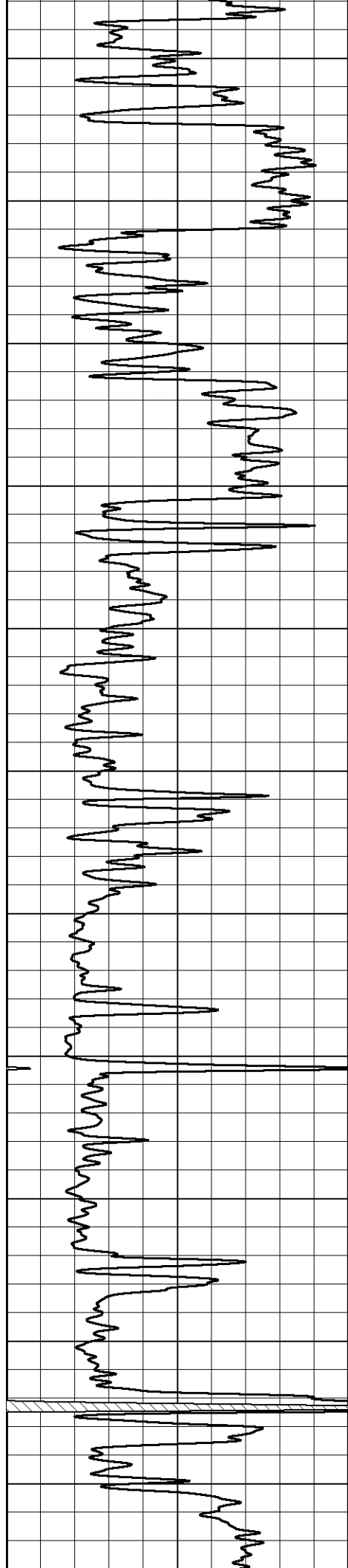
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2600

2650

2700





2750

2800

2850

2900

2950

3000

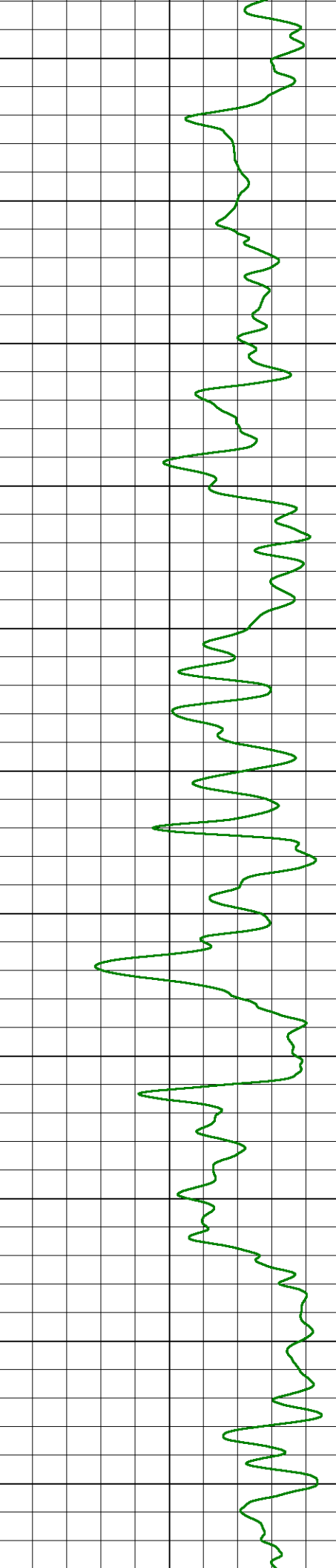
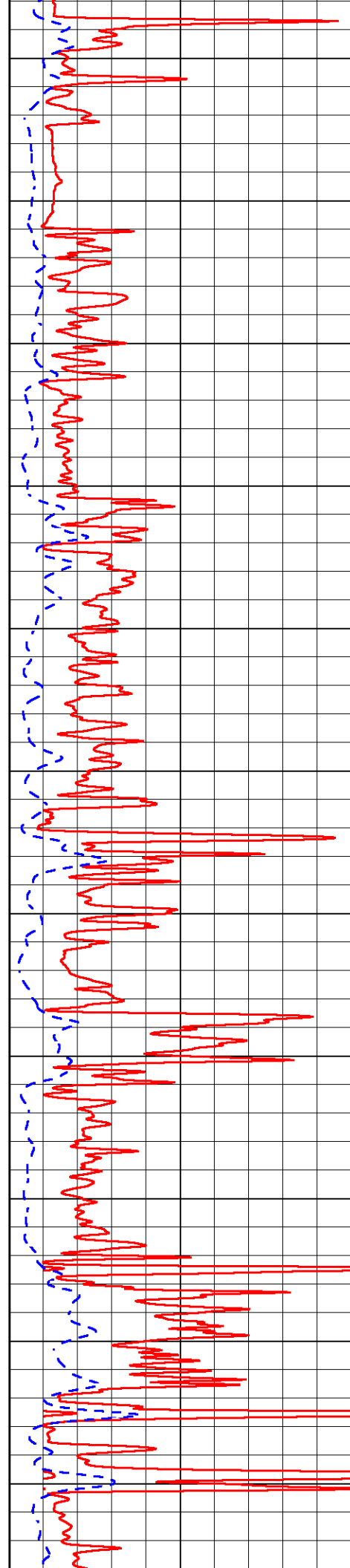
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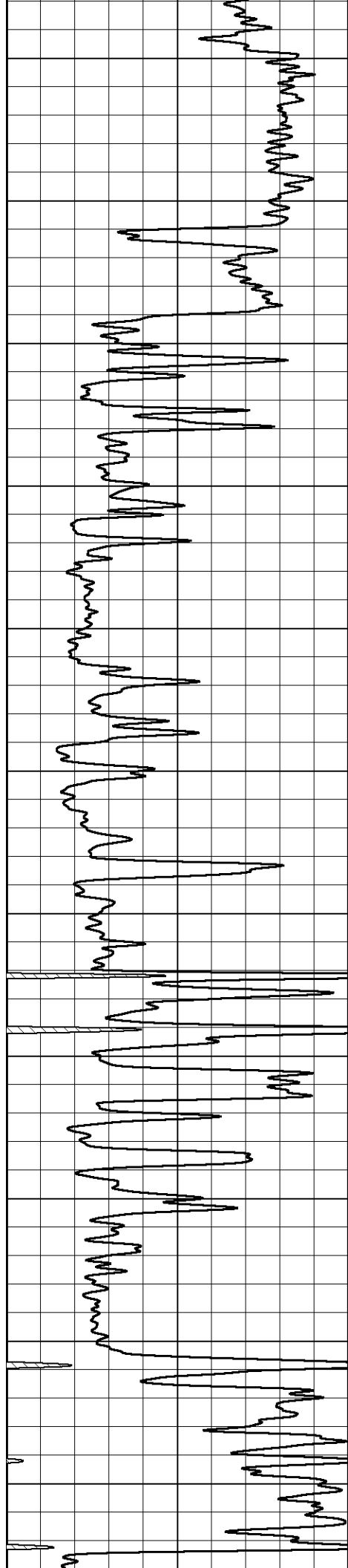
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3150

3200

3250





3300

3350

3400

3450

3500

3550

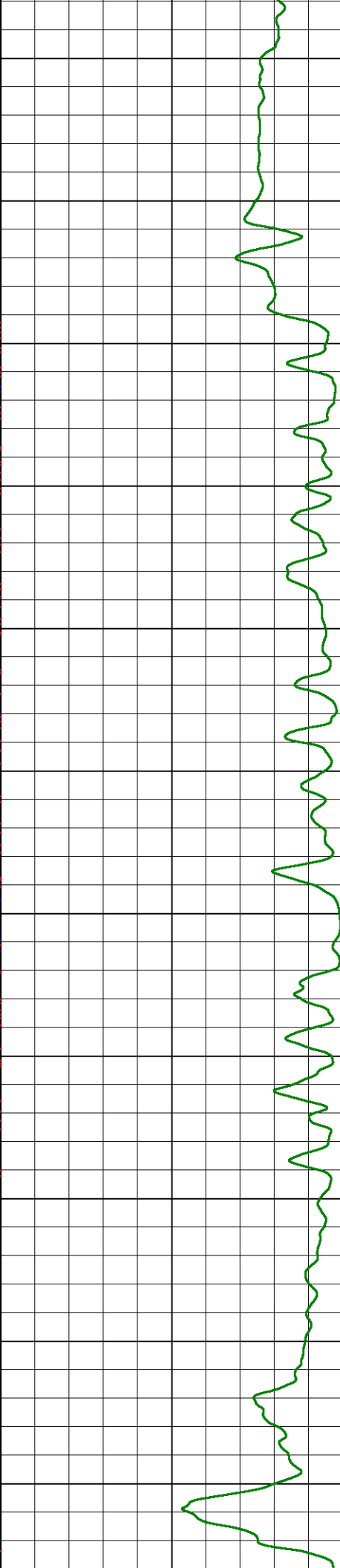
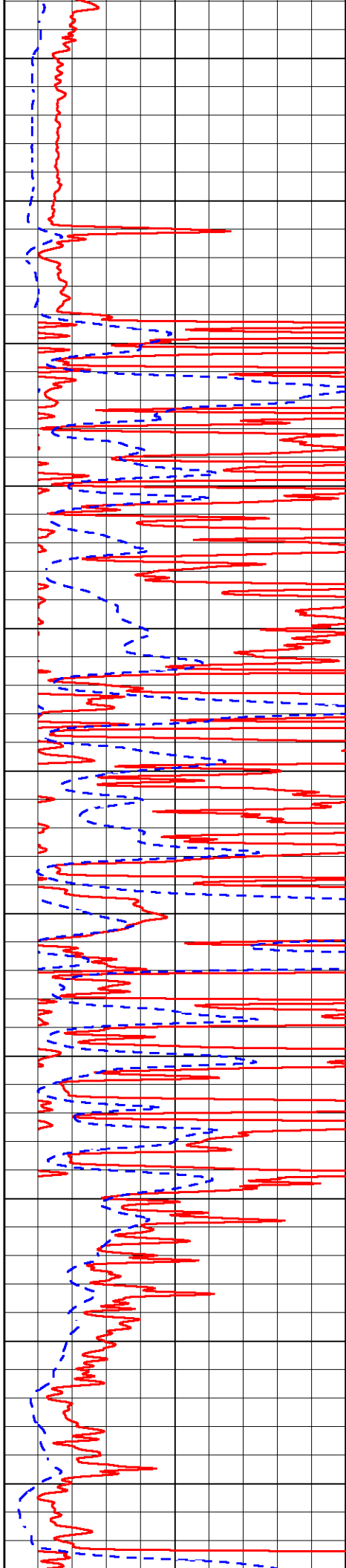
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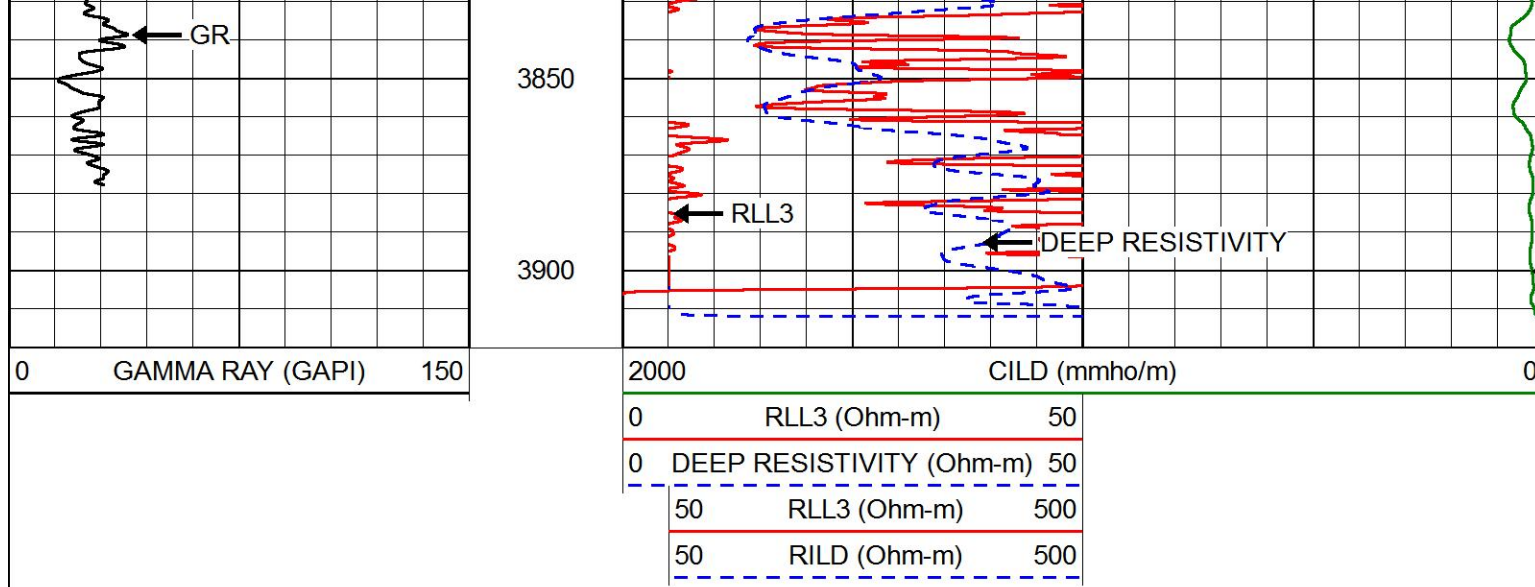
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3700

3750

3800

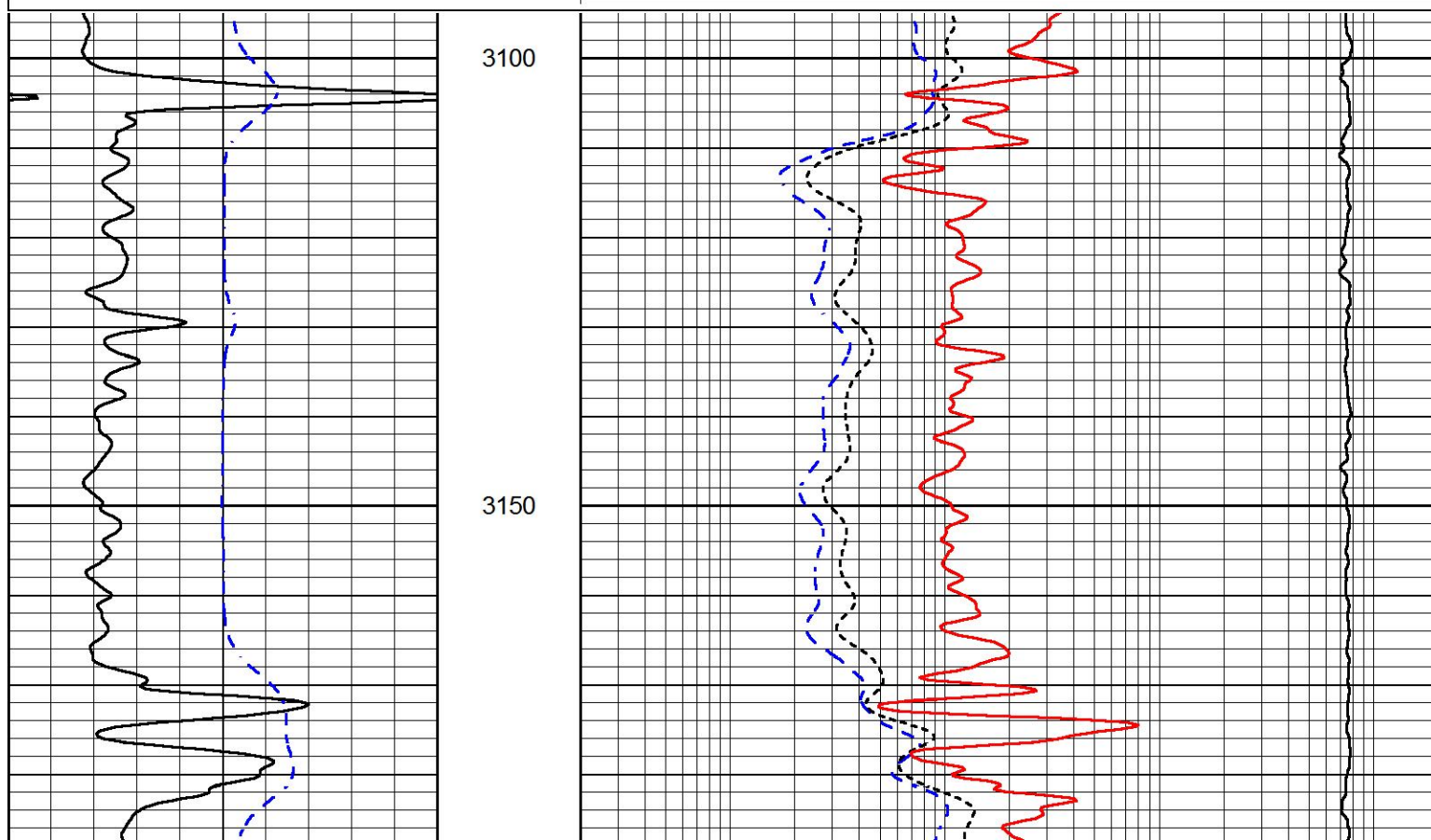


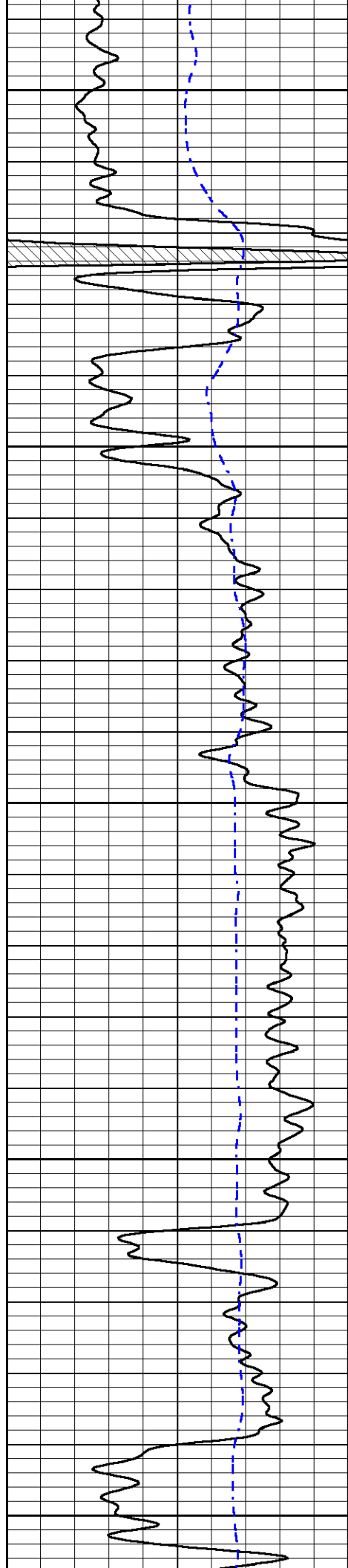


MAIN PASS

Database File	rama_reverts_1_27.db
Dataset Pathname	stackmel/pass4.1
Presentation Format	dil
Dataset Creation	Sat Dec 01 16:42:51 2018
Charted by	Depth in Feet scaled 1:240

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





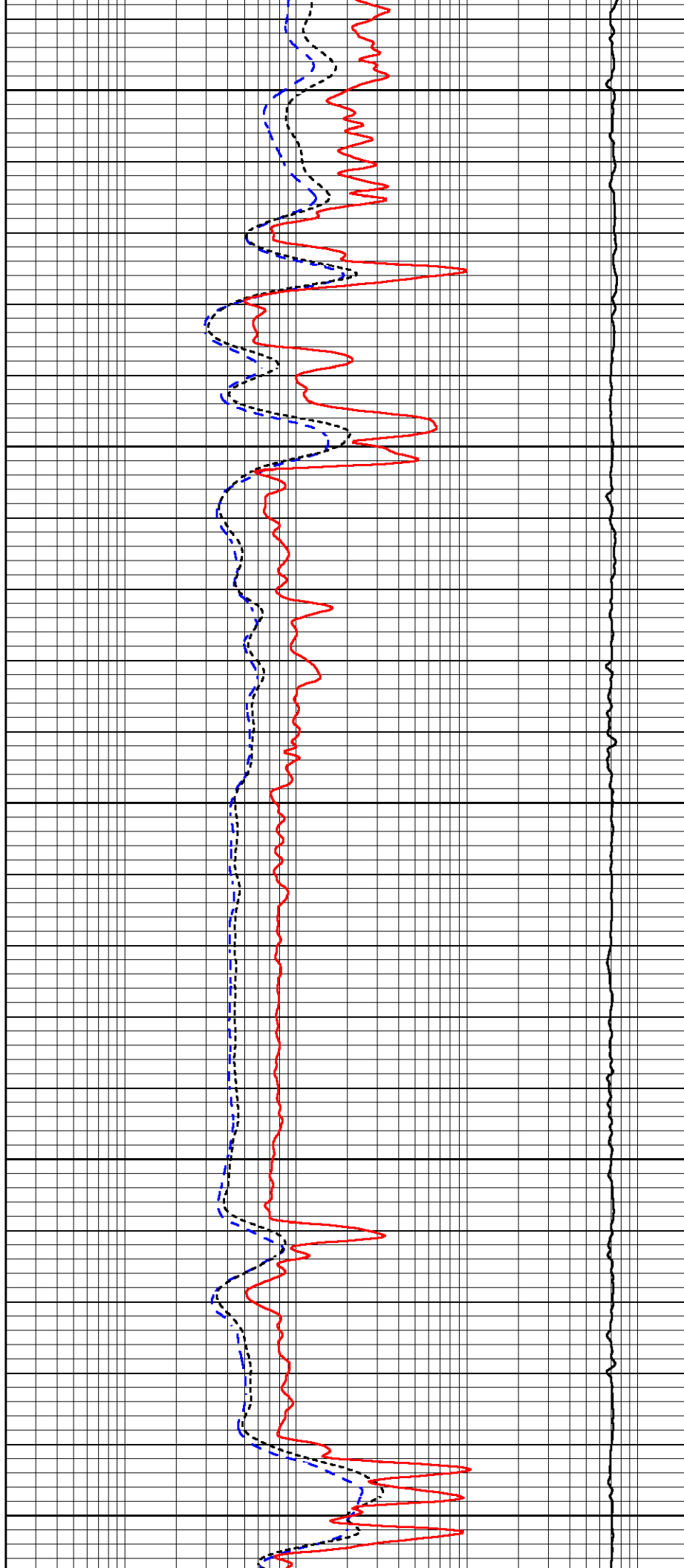
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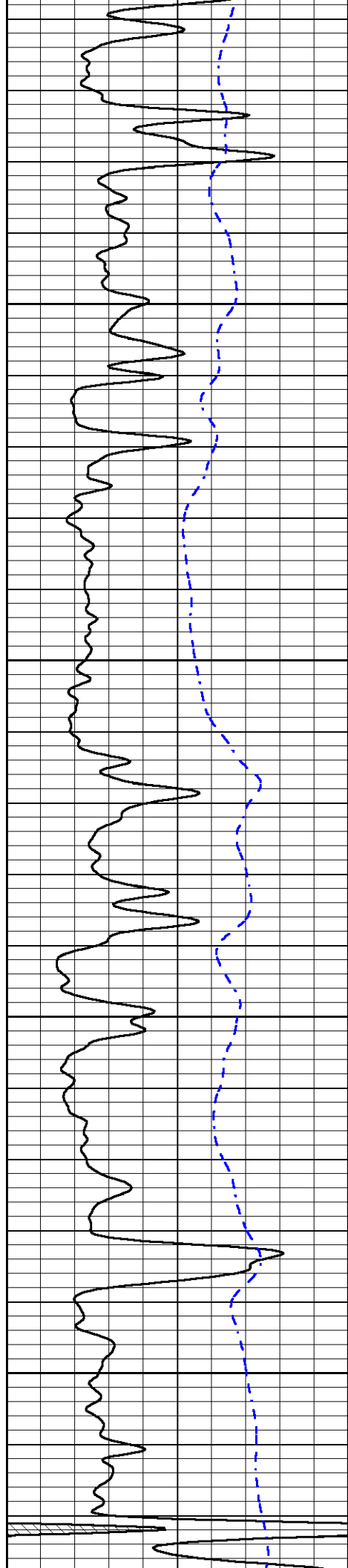
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3300

3350

3400



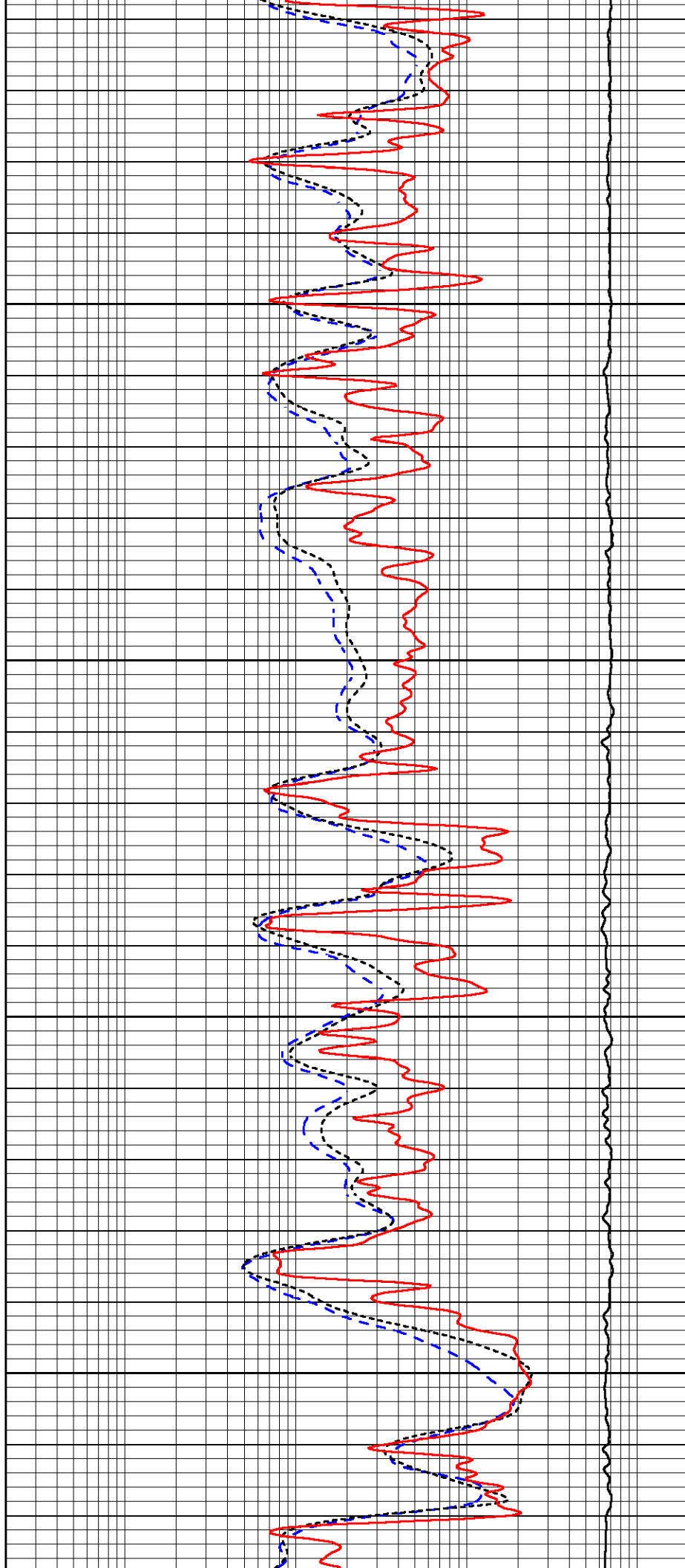


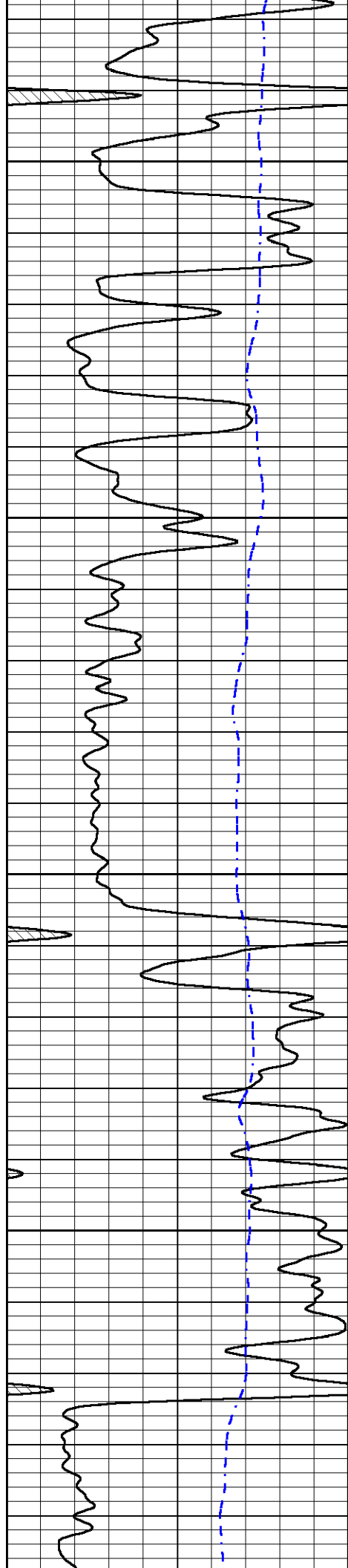
3450

3500

3550

3600



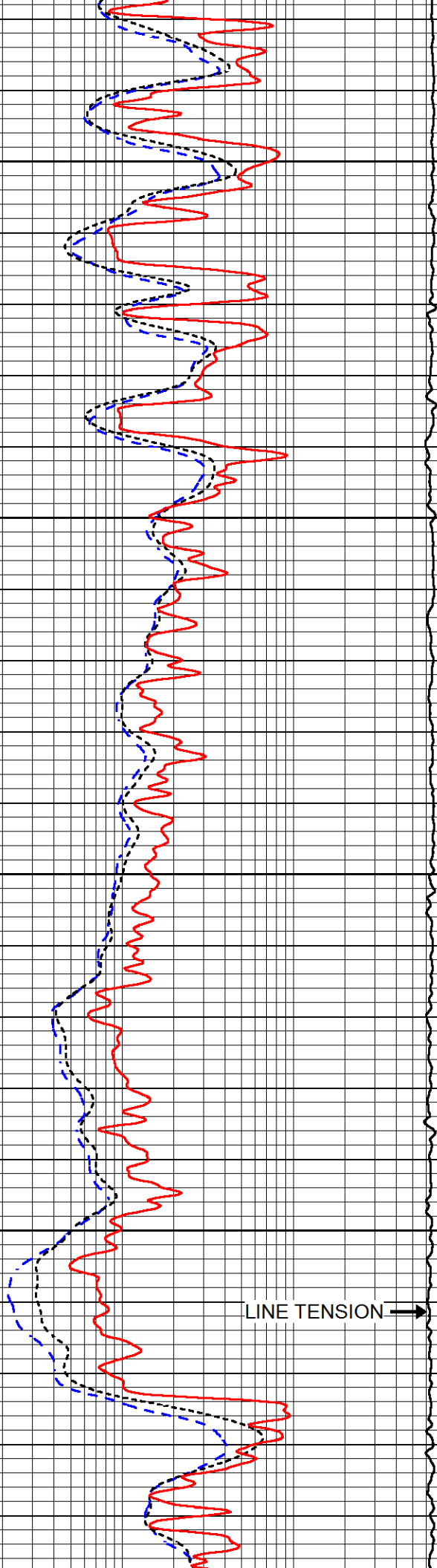


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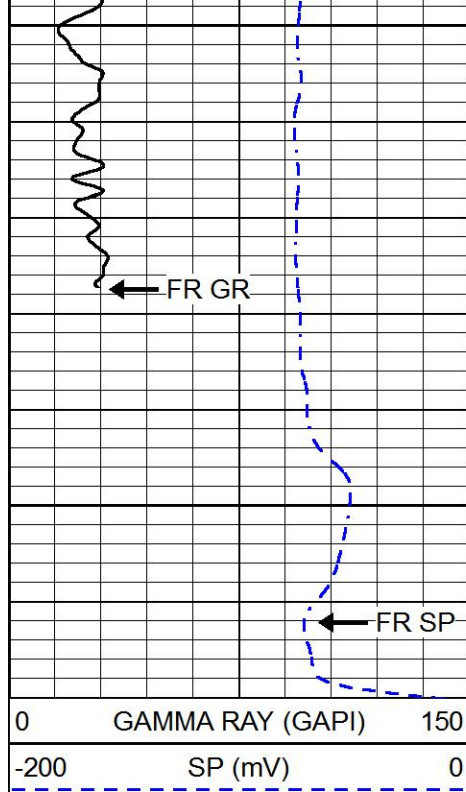
3700

3750

3800

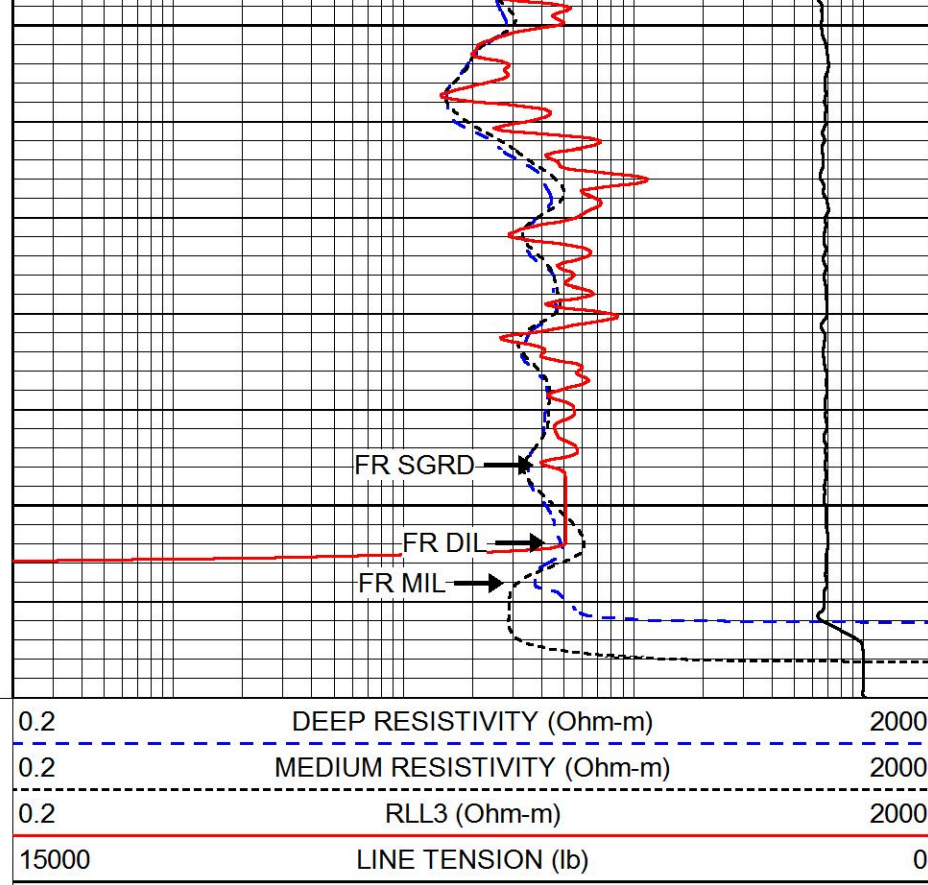


LINE TENSION →



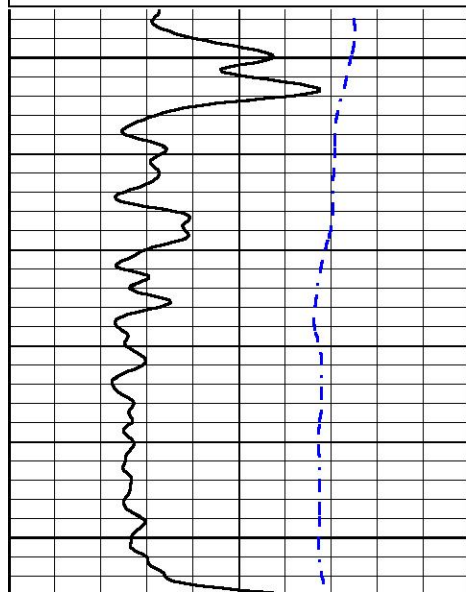
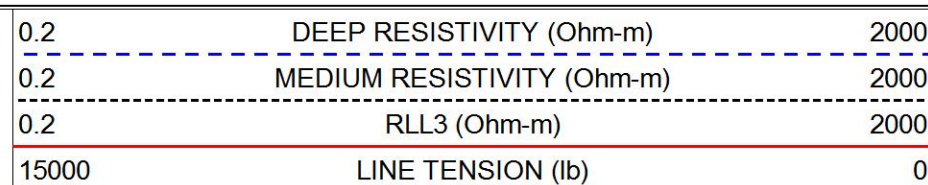
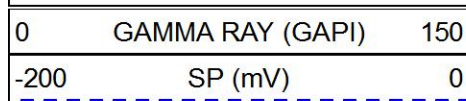
3850

3900



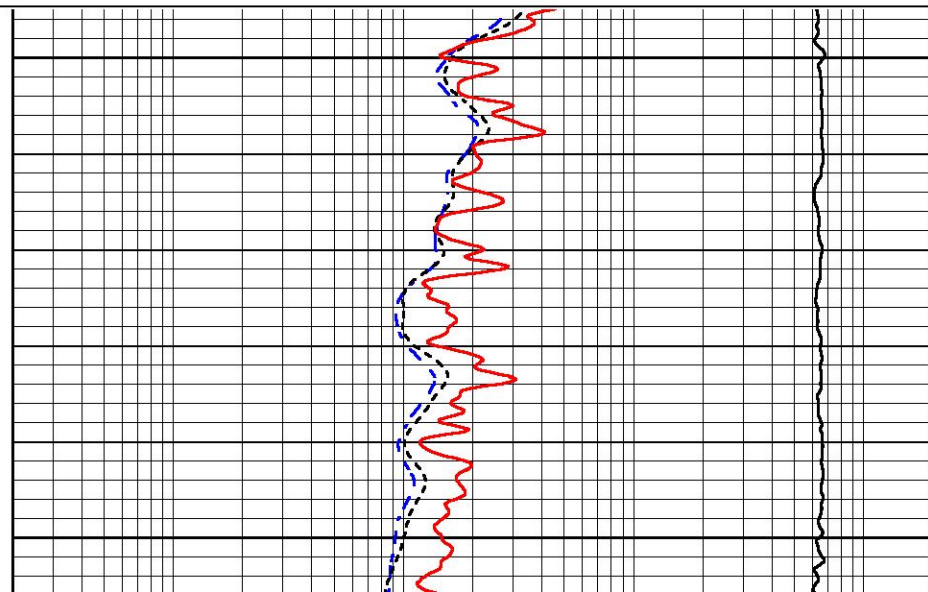
REPEAT SECTION

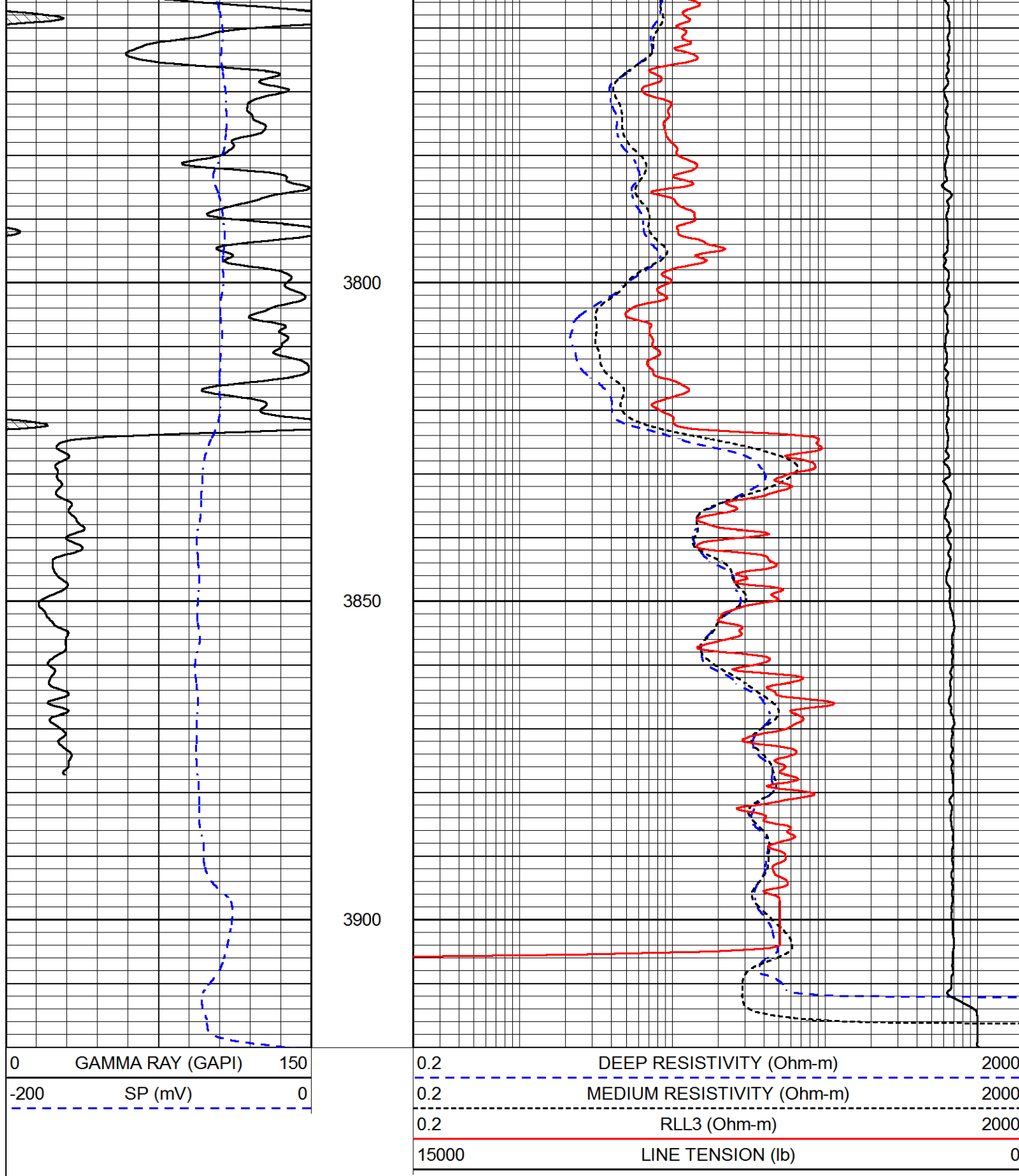
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 Dataset Pathname stackmel/pass2.1
 Presentation Format dil
 Dataset Creation Sat Dec 01 16:23:05 2018
 Charted by Depth in Feet scaled 1:240



3700

3750





Calibration Report

Database File rama_reverts_1_27.db
Dataset Pathname stackmel/pass3.1
Dataset Creation Sat Dec 01 16:13:31 2018

Dual Induction Calibration Report

Serial-Model:
Calibration Performed:

PSI 988-M&W
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

Microlog Calibration Report

Serial-Model: PSI-01-PSI STKBL ML
 Performed: Thu Mar 31 18:14:32 2016

		Readings		References			Results	
	Zero	Cal		Zero	Cal		m	b
Normal	0.0000	1.0000		0.0000	1.0000	Ohm-m	32500.0000	-1.0000
Inverse	0.0000	1.0000		0.0000	1.0000	Ohm-m	39500.0000	-1.0000
Caliper	1.0001	1.1397		6.5000	18.5000	in	86.0000	-82.4800

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		1.01		

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



Company	RAMA OPERATING CO. INC.
Well	REWERTS #1-27
Field	BEDFORD
County	STAFFORD
State	KANSAS