



PIONEER
Pioneer Energy Services

DUAL INDUCTION LOG

Company **GULF EXPLORATION, LLC**
Well **GRIFFIN TRUST NO. 1-30**
Field **UNNAMED**
County **OSBORNE** State **KANSAS**

Location: API #: 15-141-20476-00-00

Other Services

SEC 30 TWP 8S RGE 15W
990' FNL & 2310' FEL

CNL/CDL
MEL

Permanent Datum **GROUND LEVEL** Elevation **1976'**
Log Measured From **KELLY BUSHING**
Drilling Measured From **KELLY BUSHING**

Elevation
K.B. 1981'
D.F. N/A
G.L. 1976'

Date **3/4/2018**

Run Number **ONE**

Depth Driller **3694'**

Depth Logger **3691'**

Bottom Logged Interval **3690'**

Top Log Interval **250'**

Casing Driller **8.625" @ 260'**

Casing Logger **258'**

Bit Size **7.875"**

Type Fluid in Hole **CHEMICAL**

Salinity, ppm CL **4000**

Density / Viscosity **9.1 64**

pH / Fluid Loss **11.5 7.2**

Source of Sample **FLOWLINE**

Rm @ Meas. Temp **.80 @ 54**

Rmt @ Meas. Temp **.60 @ 54**

Rmc @ Meas. Temp **1.08 @ 54**

Source of Rmt / Rmc **CHARTS**

Rm @ BHT **.38 @ 113**

Operating Rig Time **3 HOURS**

Max Rec. Temp. F **113 DEGF**

Equipment Number **108**

Location **HAYS**

Recorded By **J. HENRICKSON**

Witnessed By **KEITH REAVIS**

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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.

NATOMA KANSAS

10 NORTH TO 160 RD, 1/4 WEST, SOUTH INTO

Log Measured From: **KELLY BUSHING** 5 Ft. Above Permanent Datum

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

Your Pioneer Energy Services Crew

Engineer: **J. HENRICKSON**
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: **KEITH REAVIS**
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 113	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 -217	degF 42	Off	ft 3691

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 DCAL SSD	28.43 28.42 27.93			CDL-M&W (168-986)	8.50	4.00	250.00
ML-PSI STKBL ML (PSI-02) Stackable Microlog Tools	7.58				7.58	4.00	65.00
MCAL	19.83						
MI	19.83						
MN	19.83						
RLL3	15.80						
RLL3F	15.79						
CILD	8.00			DIL-M&W (PSI 978)	18.50	3.50	220.00

CILM

4.70

SP

0.20

Dataset: gulf_explo_griffin_trust_1_30.db: field/well/stackml/pass3.1
Total length: 43.08 ft
Total weight: 685.00 lb
O.D.: 4.00 in



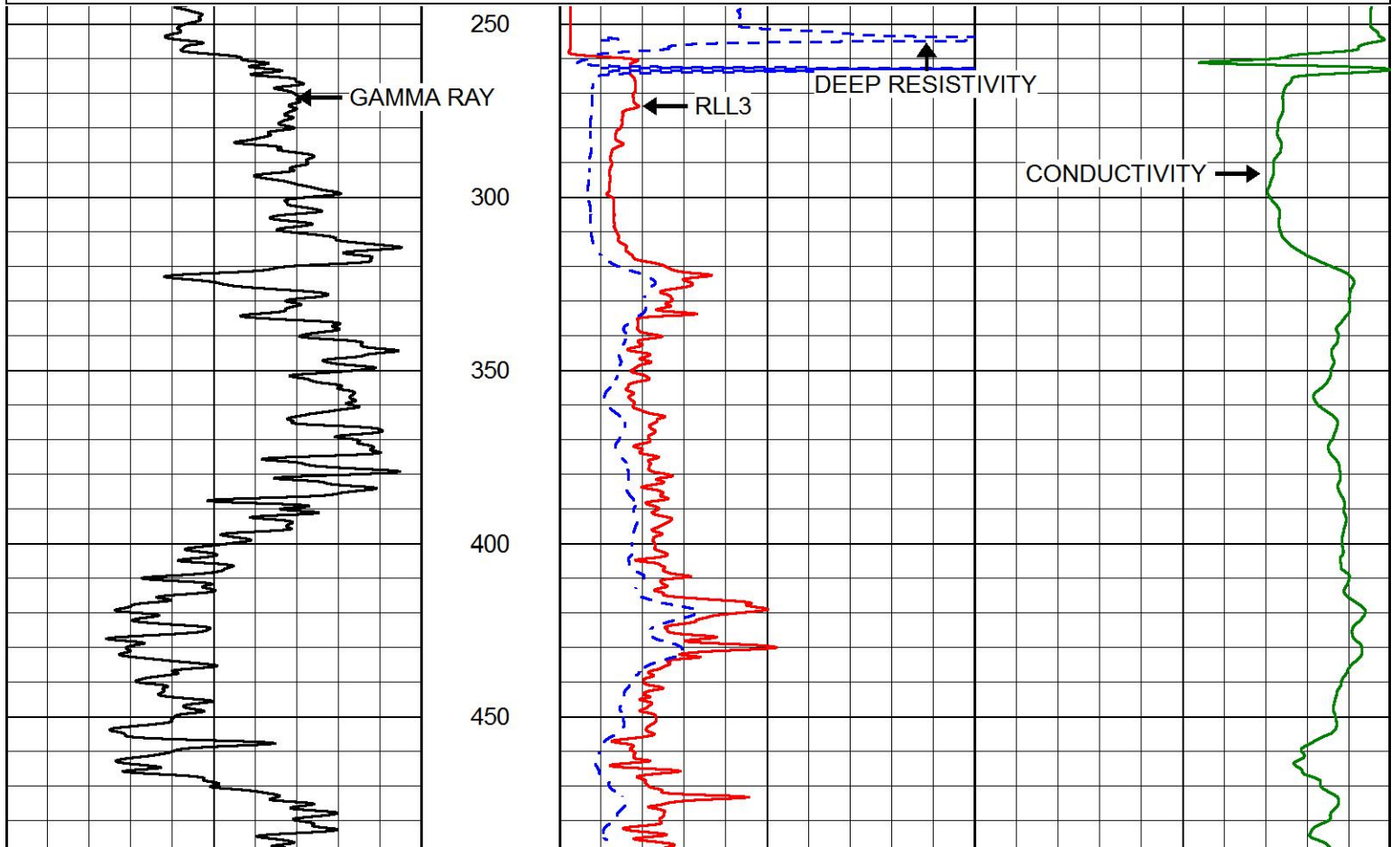
MAIN PASS

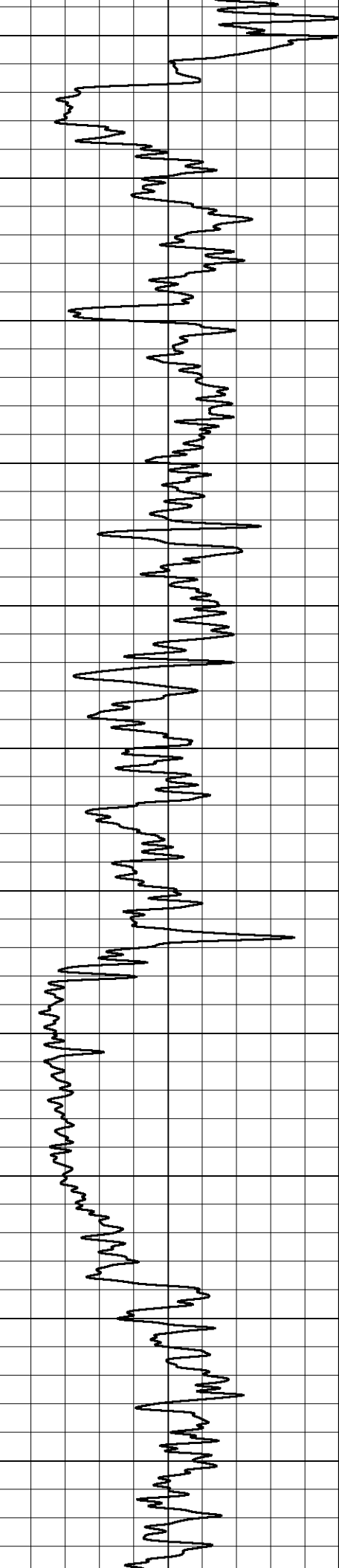
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Dataset Pathname stackml/pass3.1
Presentation Format dil2in
Dataset Creation Sun Mar 04 09:46:18 2018
Charted by Depth in Feet scaled 1:600

0 GAMMA RAY (GAPI) 150

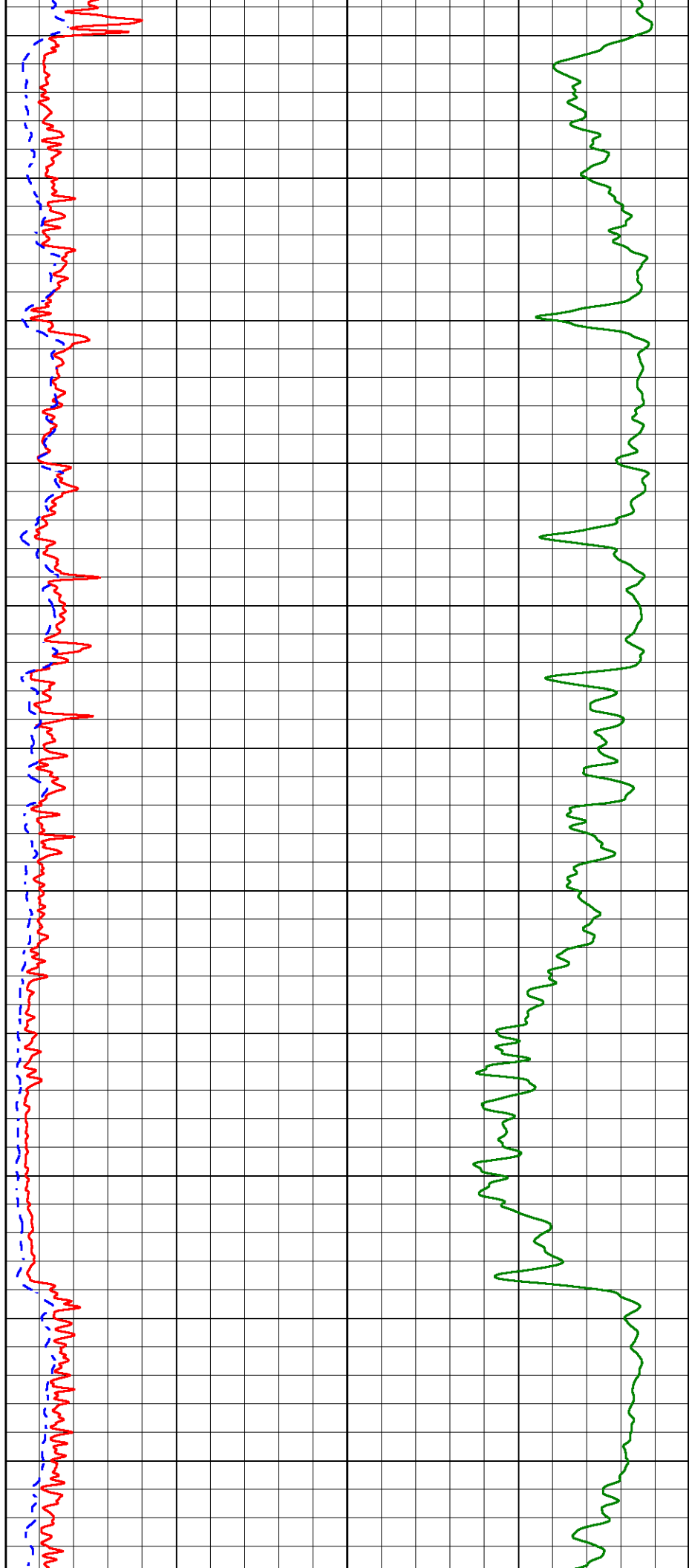
2000 CONDUCTIVITY (mmho/m) 0

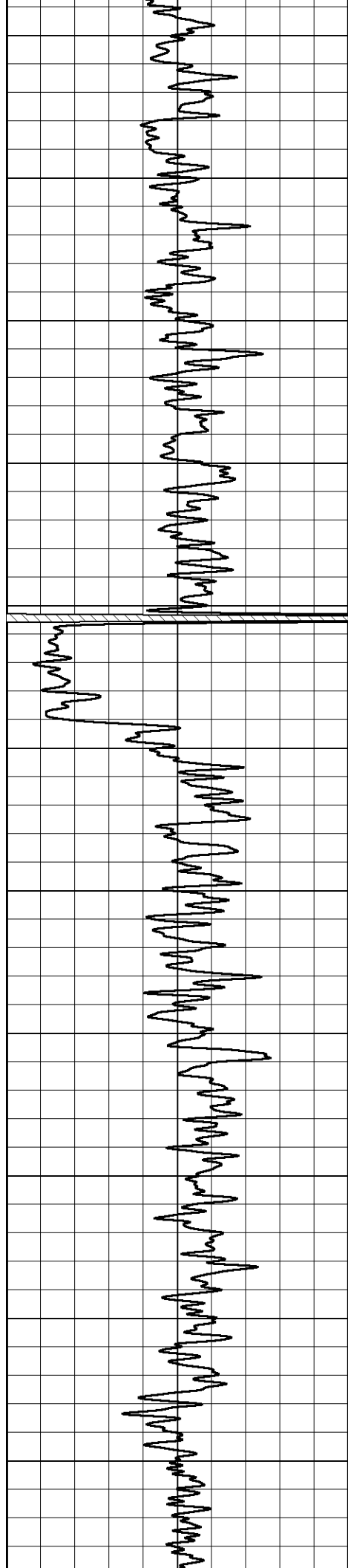
0 RLL3 (Ohm-m) 50
0 DEEP RESISTIVITY (Ohm-m) 50
50 RLL3 (Ohm-m) 500
DEEP RESISTIVITY
50 (Ohm-m) 500



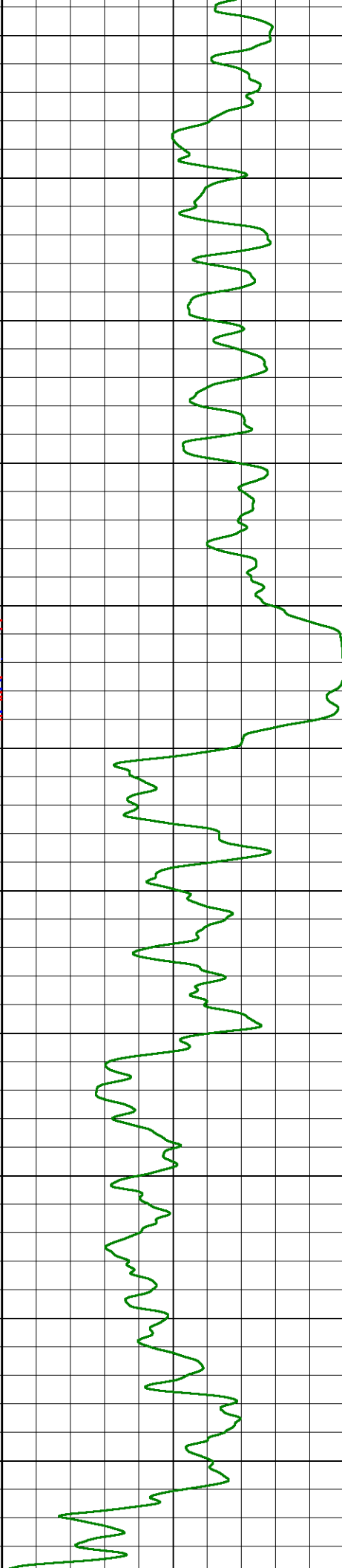
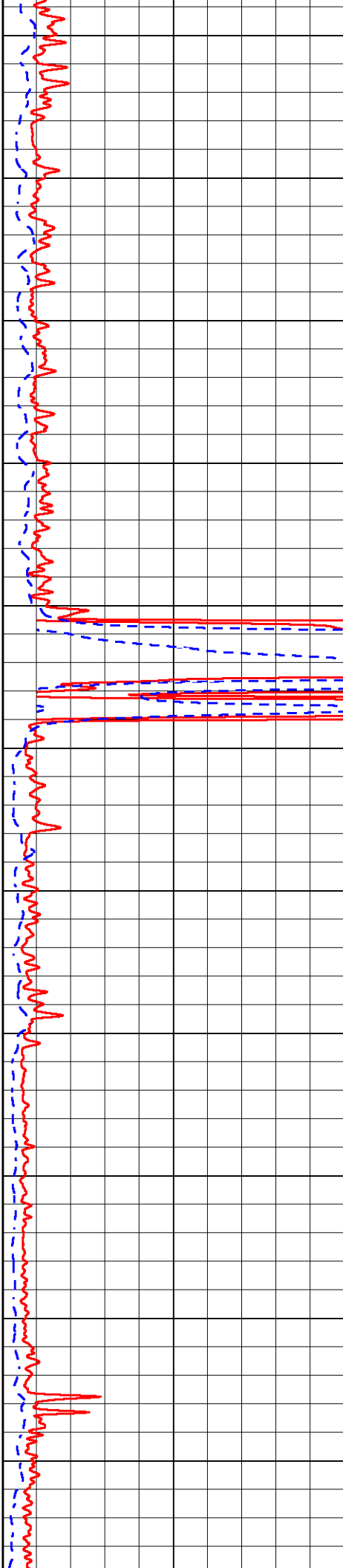


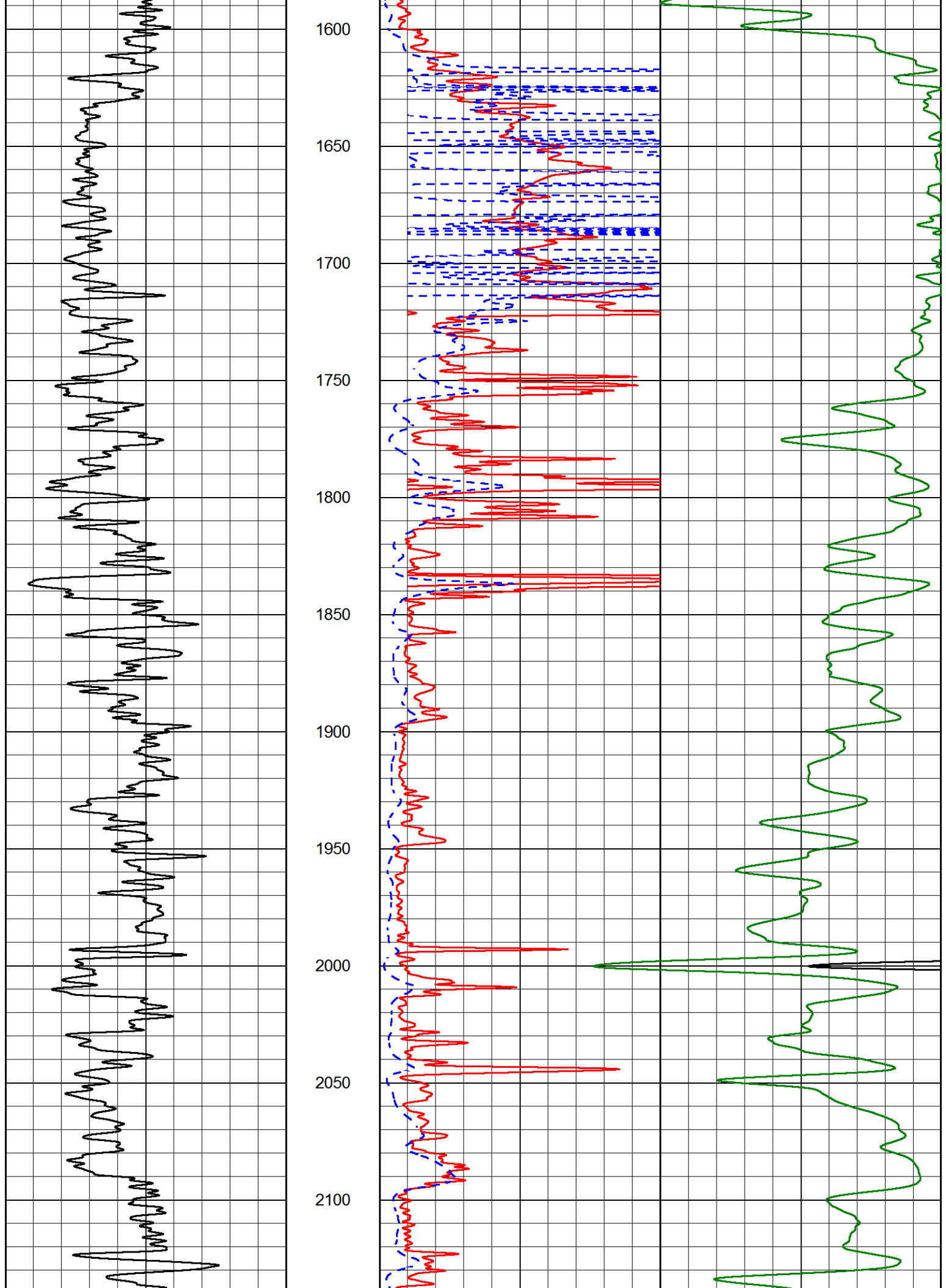
500
550
600
650
700
750
800
850
900
950
1000

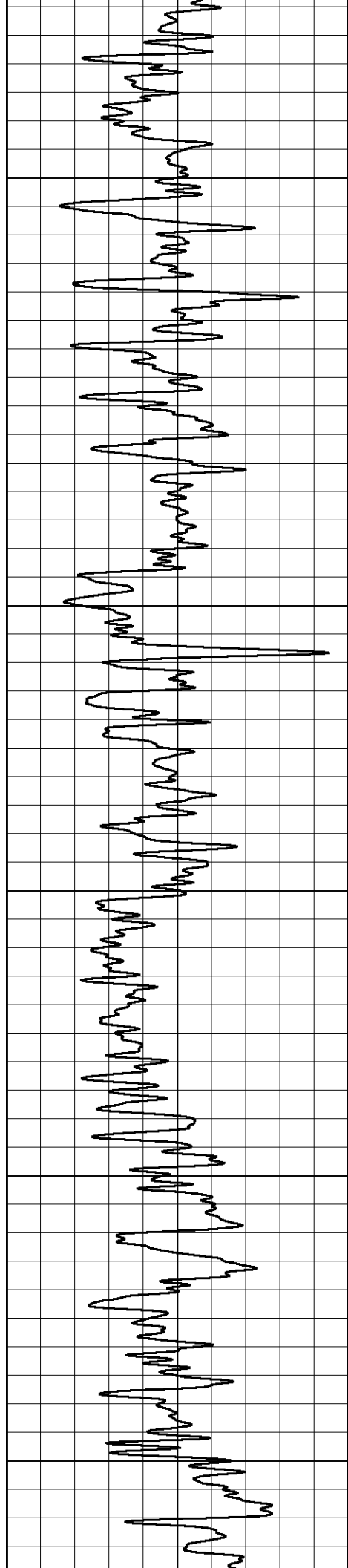




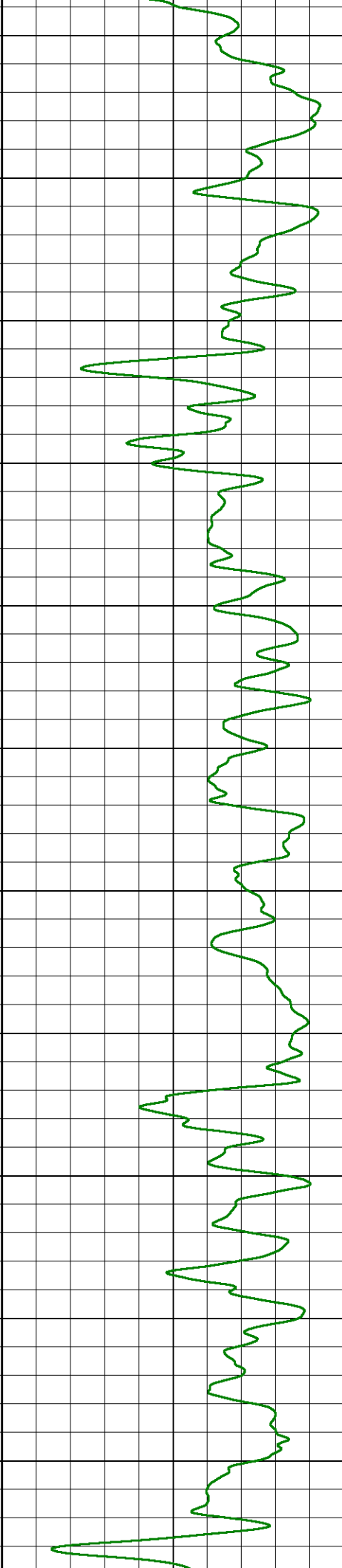
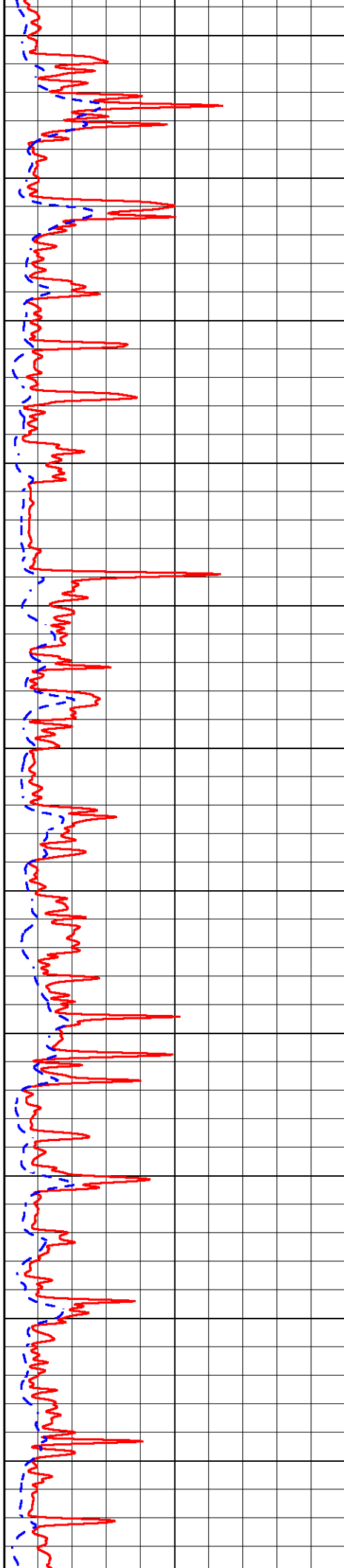
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500
1550

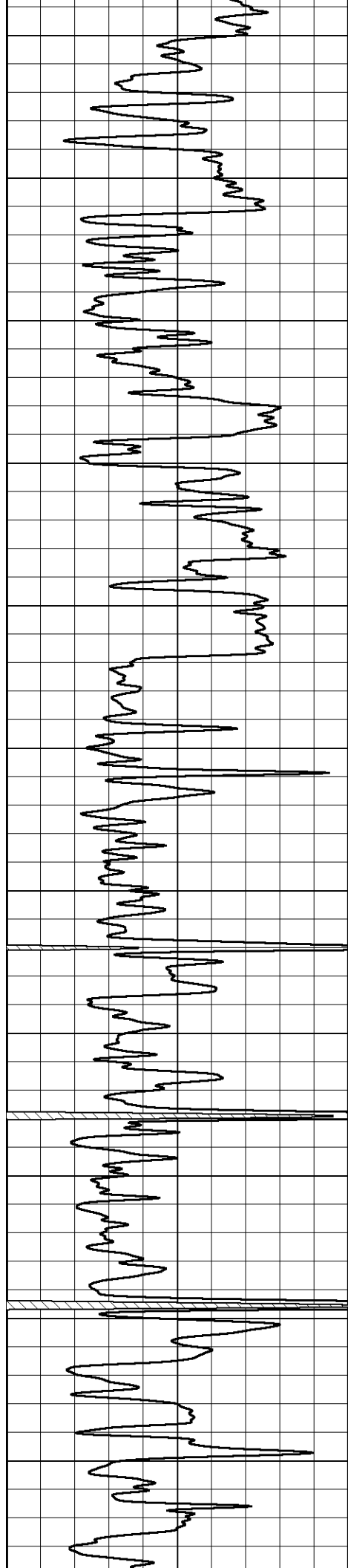






2150
2200
2250
2300
2350
2400
2450
2500
2550
2600
2650





2700

2750

2800

2850

2900

2950

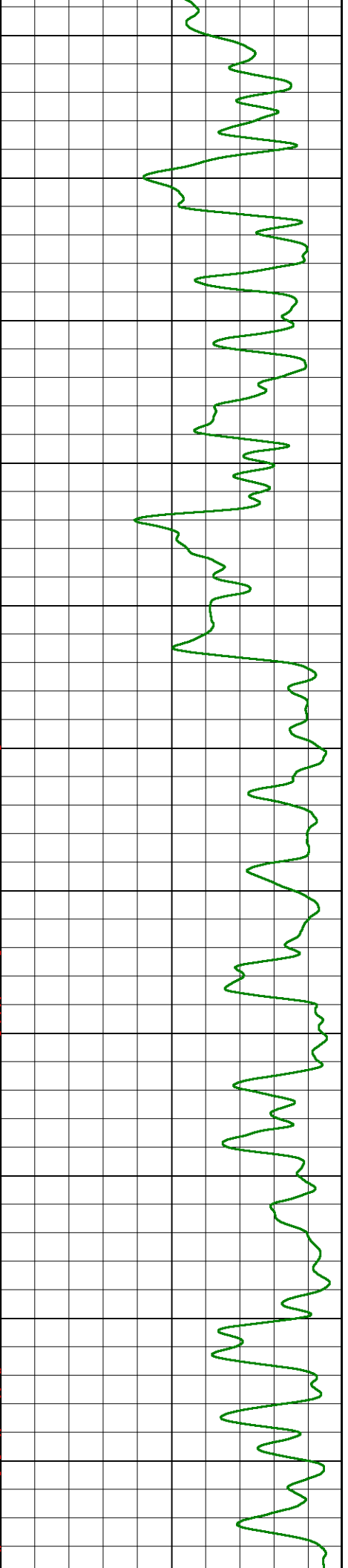
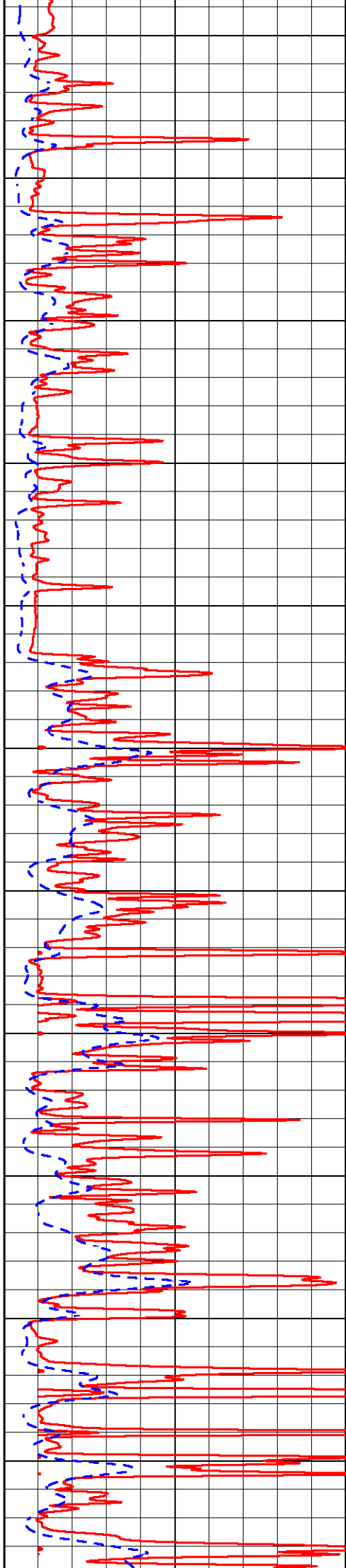
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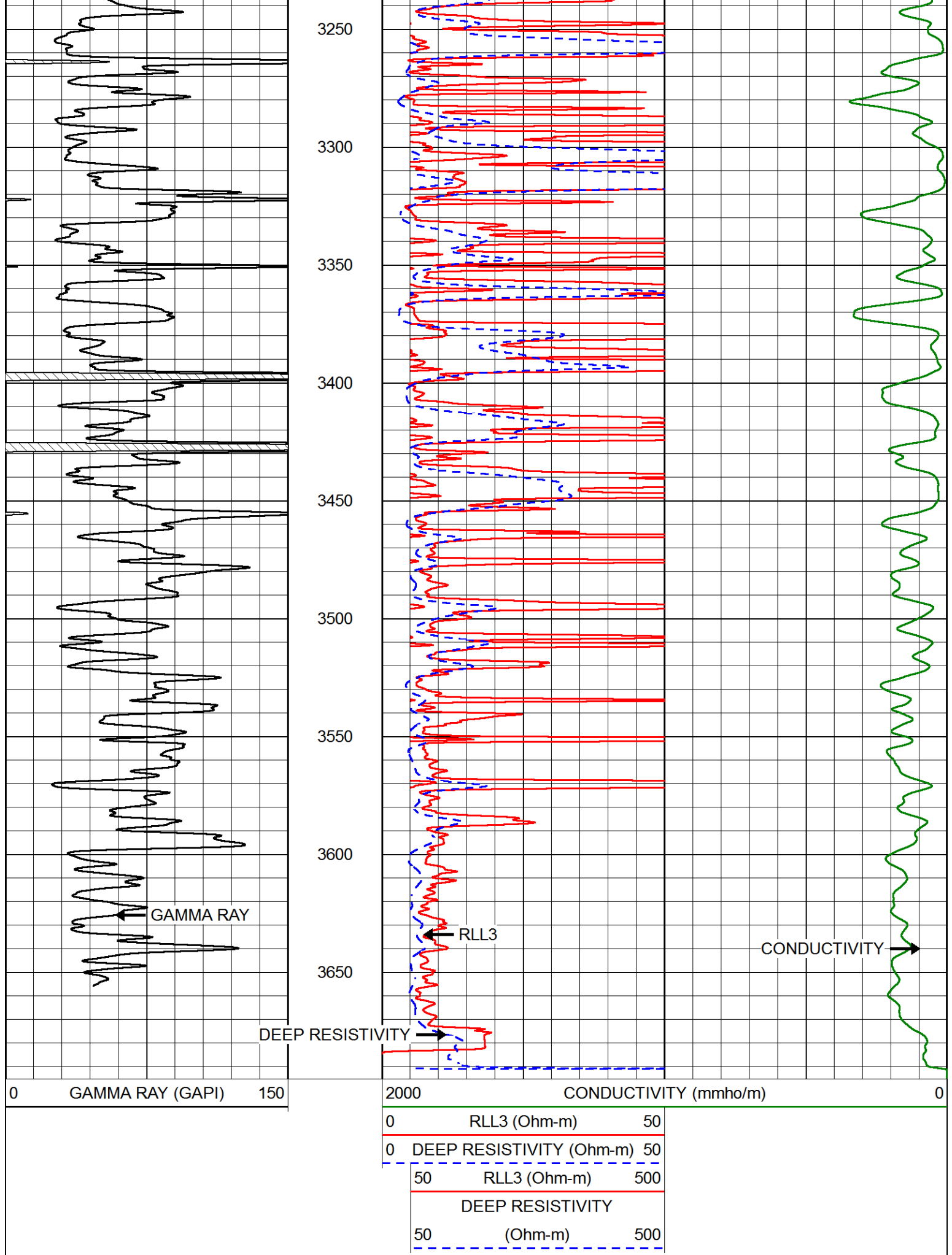
3050

3100

3150

3200





PIONEER

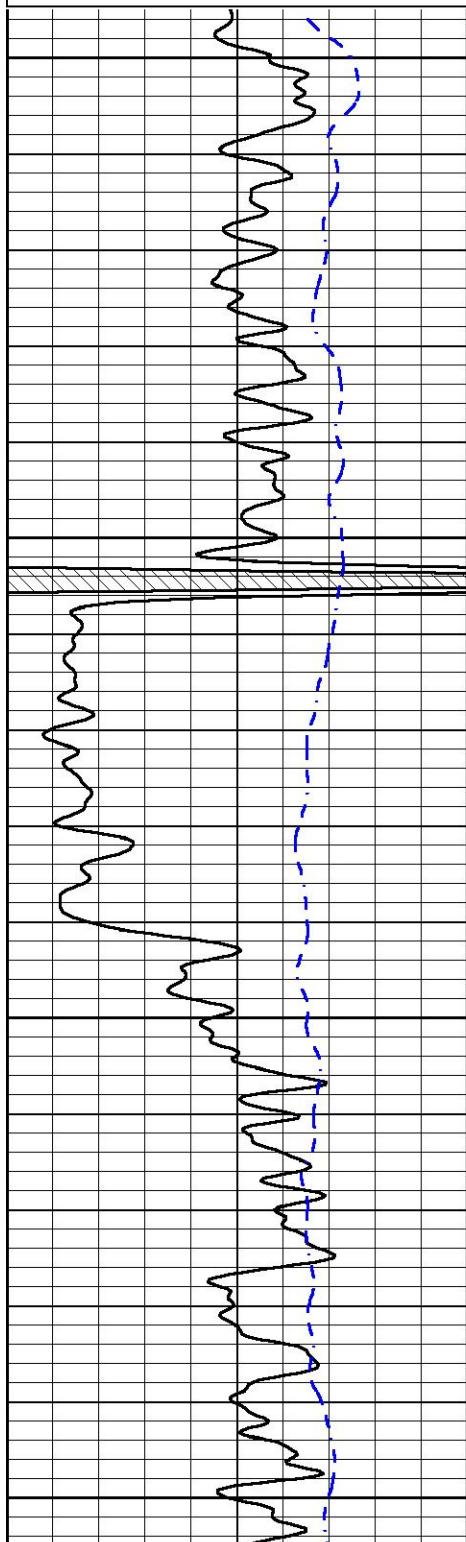
Pioneer Energy Services

MAIN PASS

Database File gulf_explo_griffin_trust_1_30.db
Dataset Pathname stackml/pass3.1
Presentation Format dil
Dataset Creation Sun Mar 04 09:46:18 2018
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

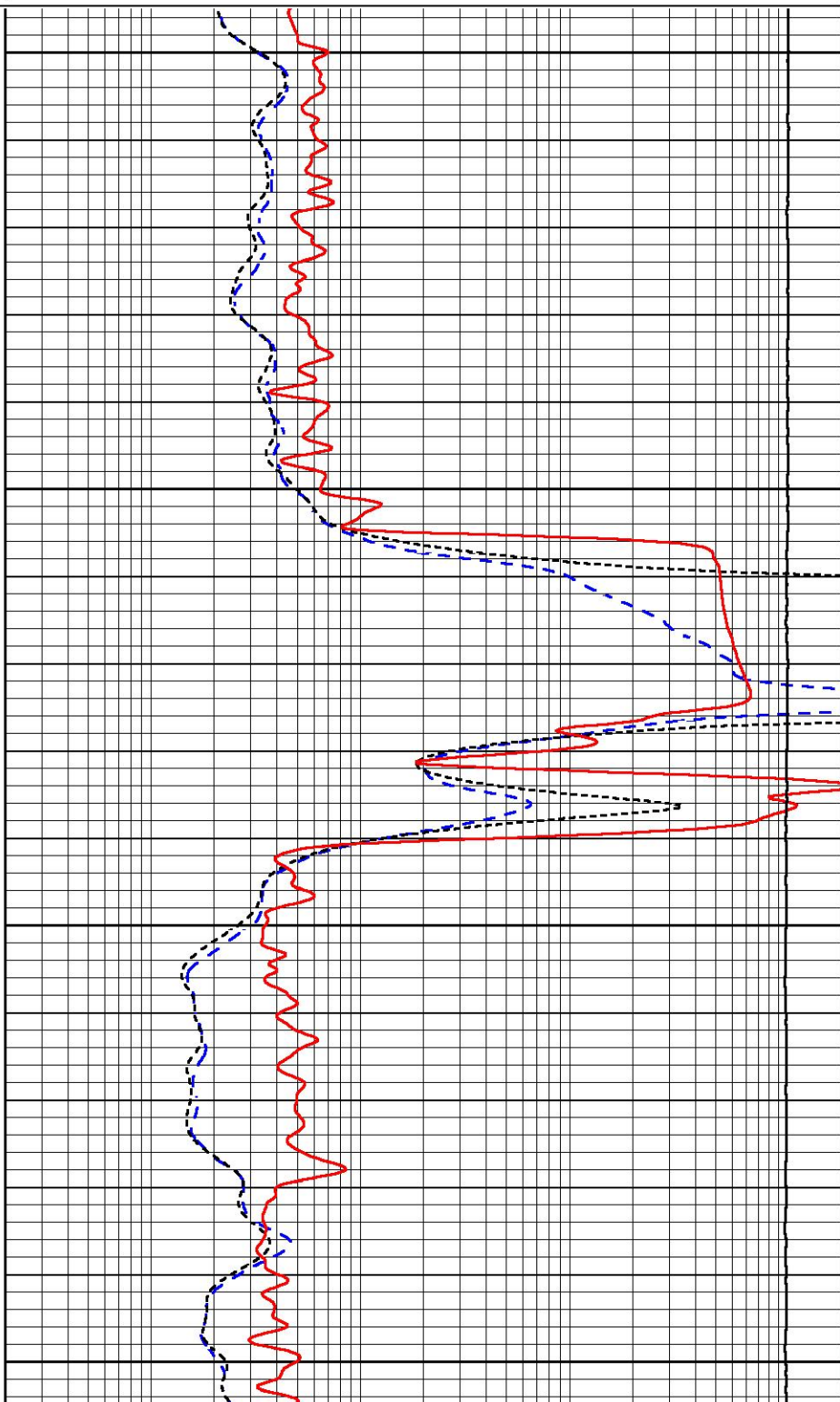


1200

1250

1300

1350



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

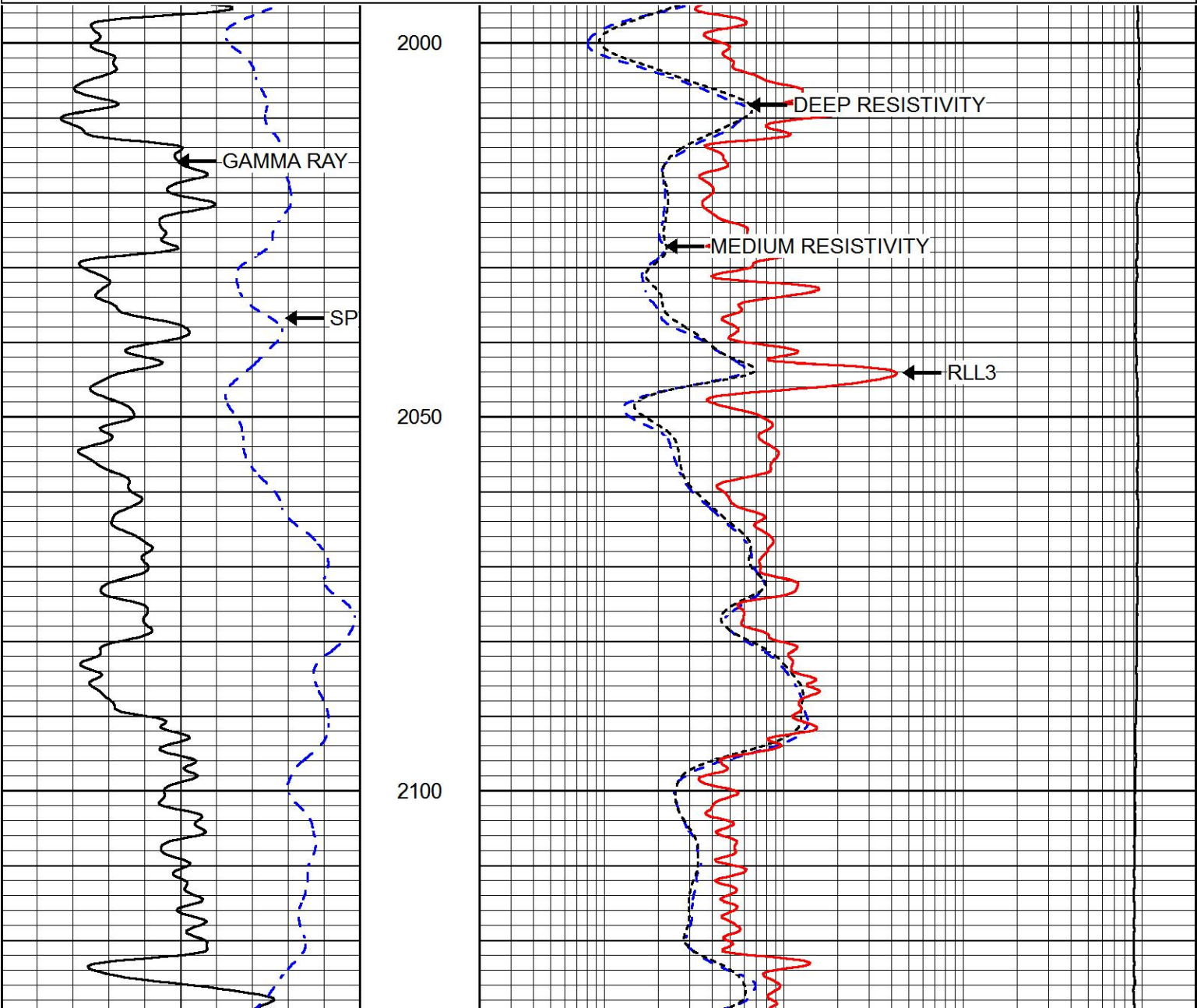


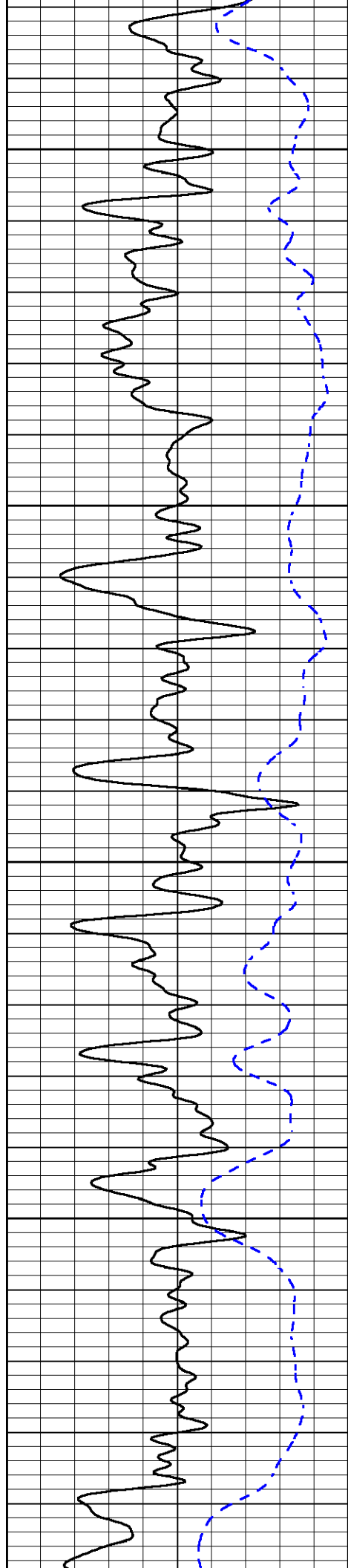
MAIN PASS

Database File	gulf_explo_griffin_trust_1_30.db
Dataset Pathname	stackml/pass3.1
Presentation Format	dil
Dataset Creation	Sun Mar 04 09:46:18 2018
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



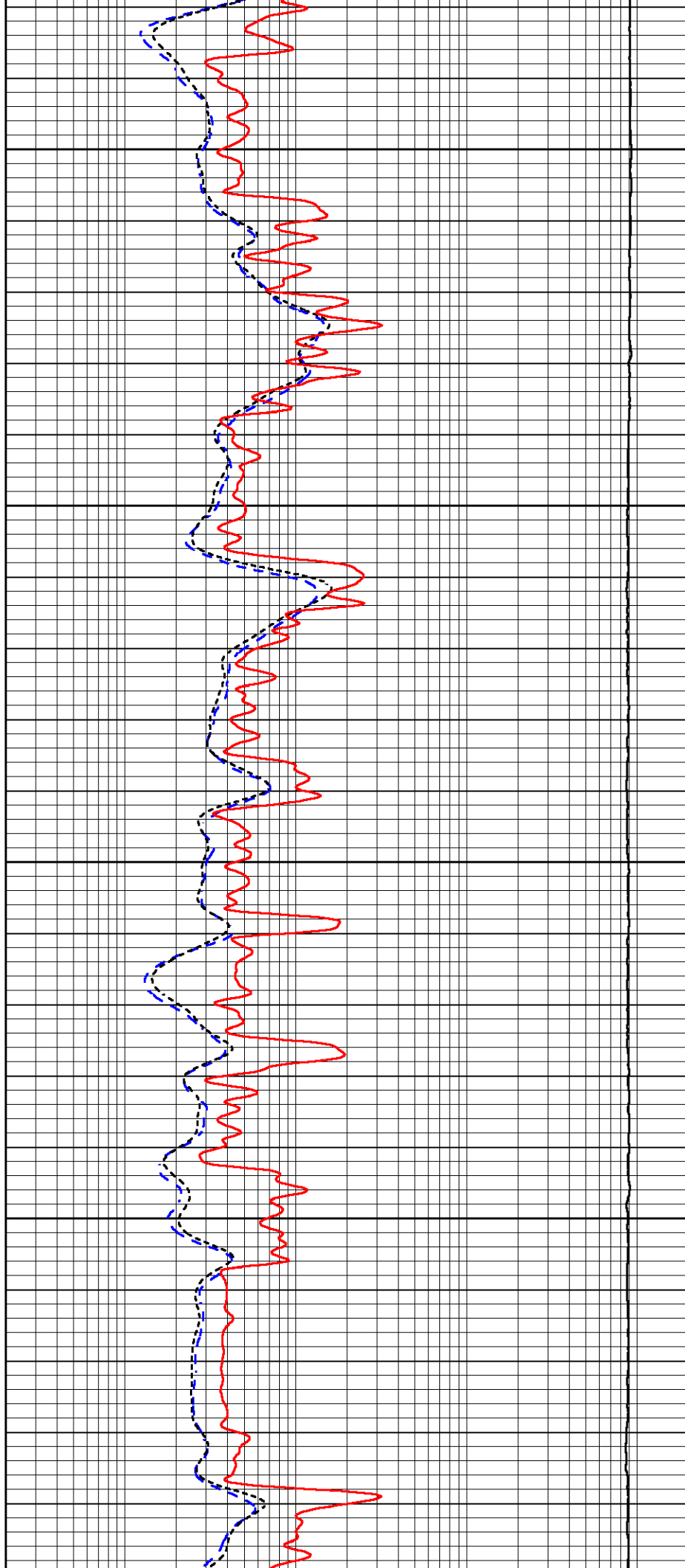


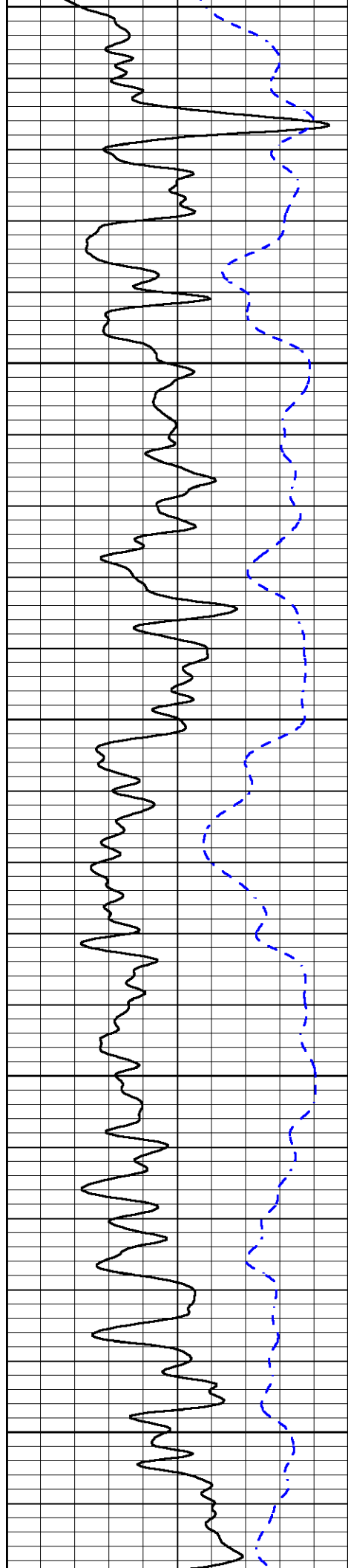
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2200

2250

2300





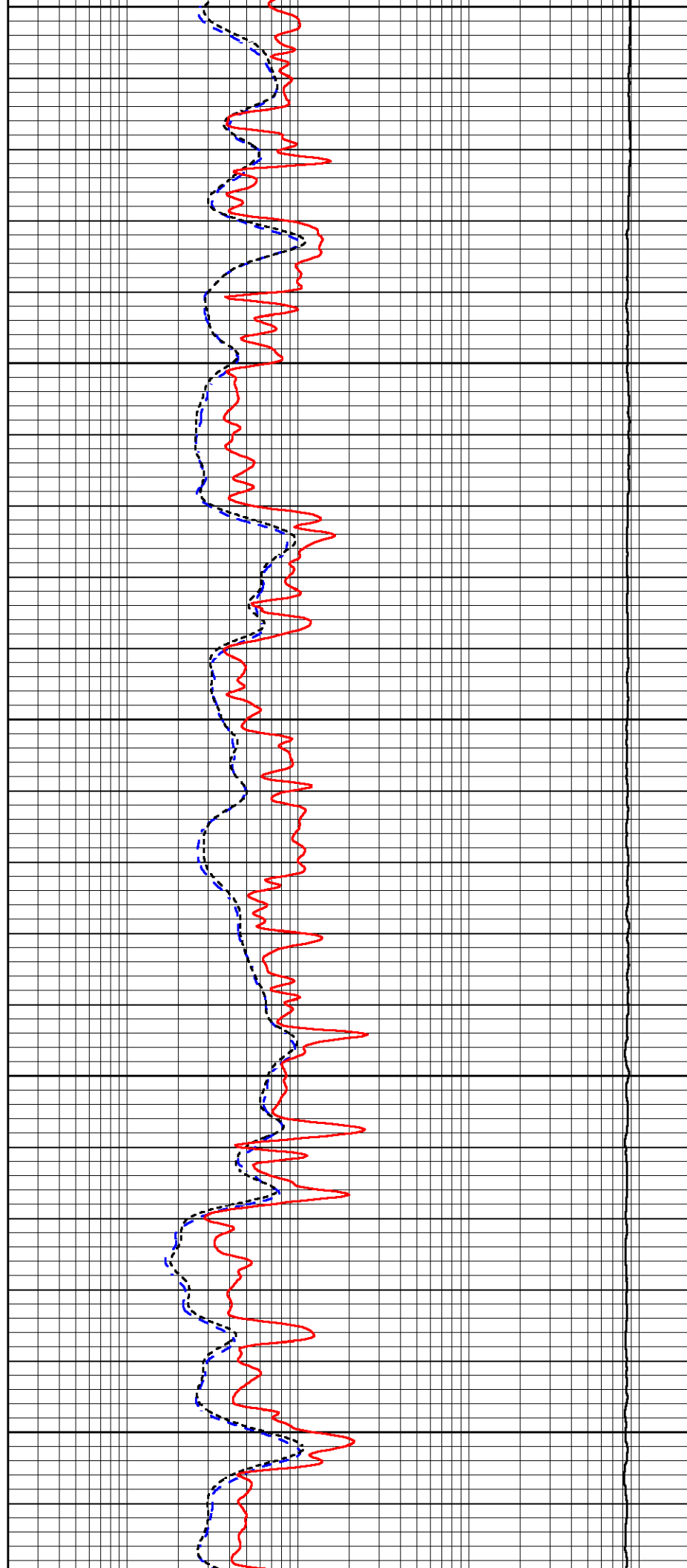
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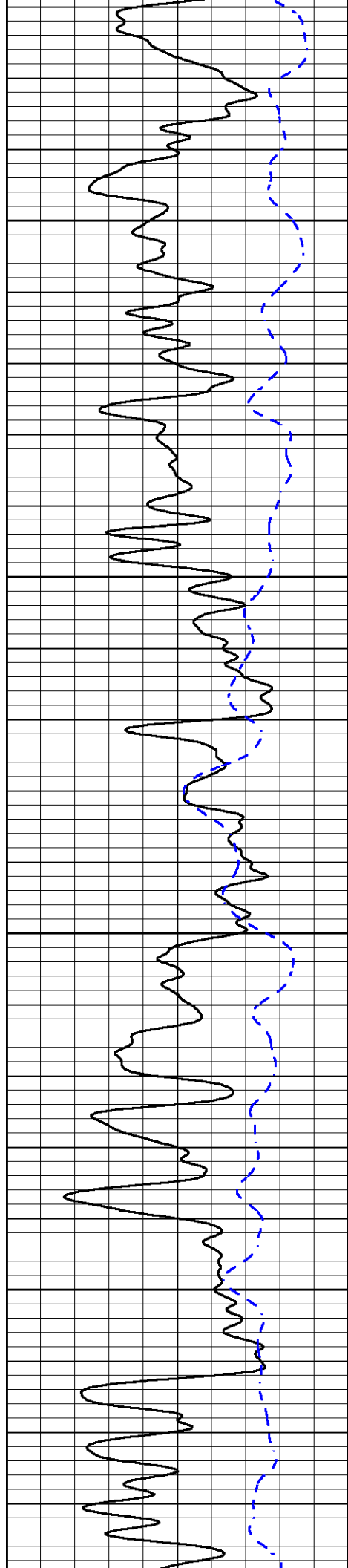
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2450

2500

2550



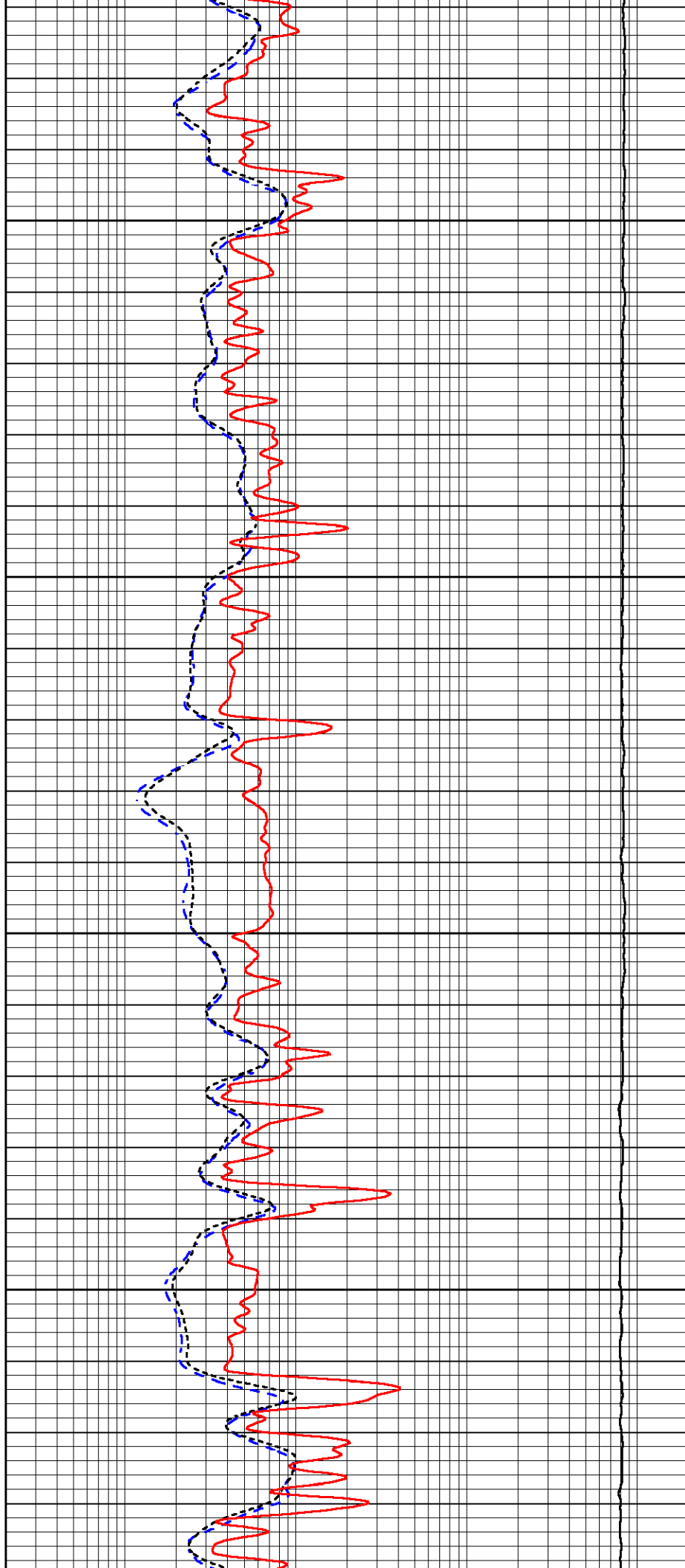


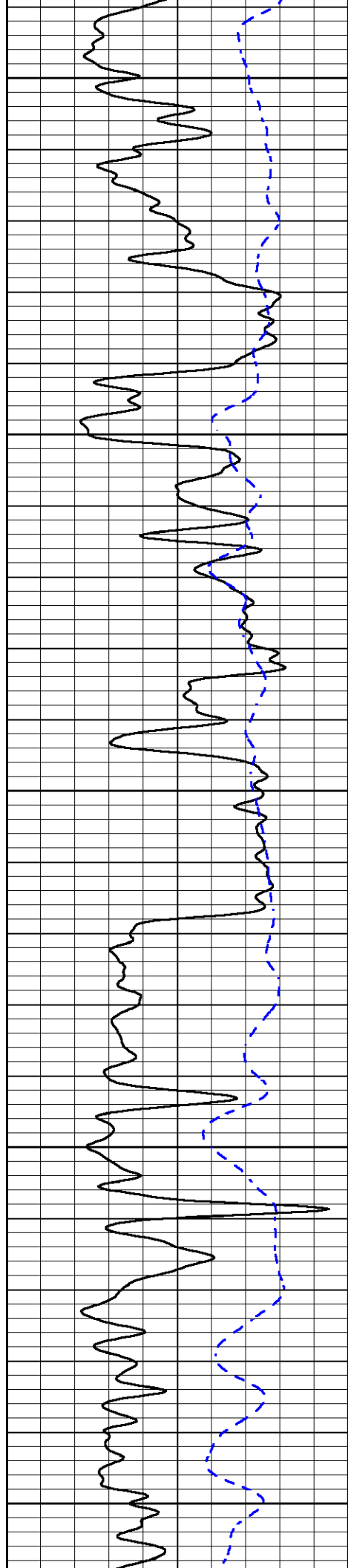
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2650

2700

2750





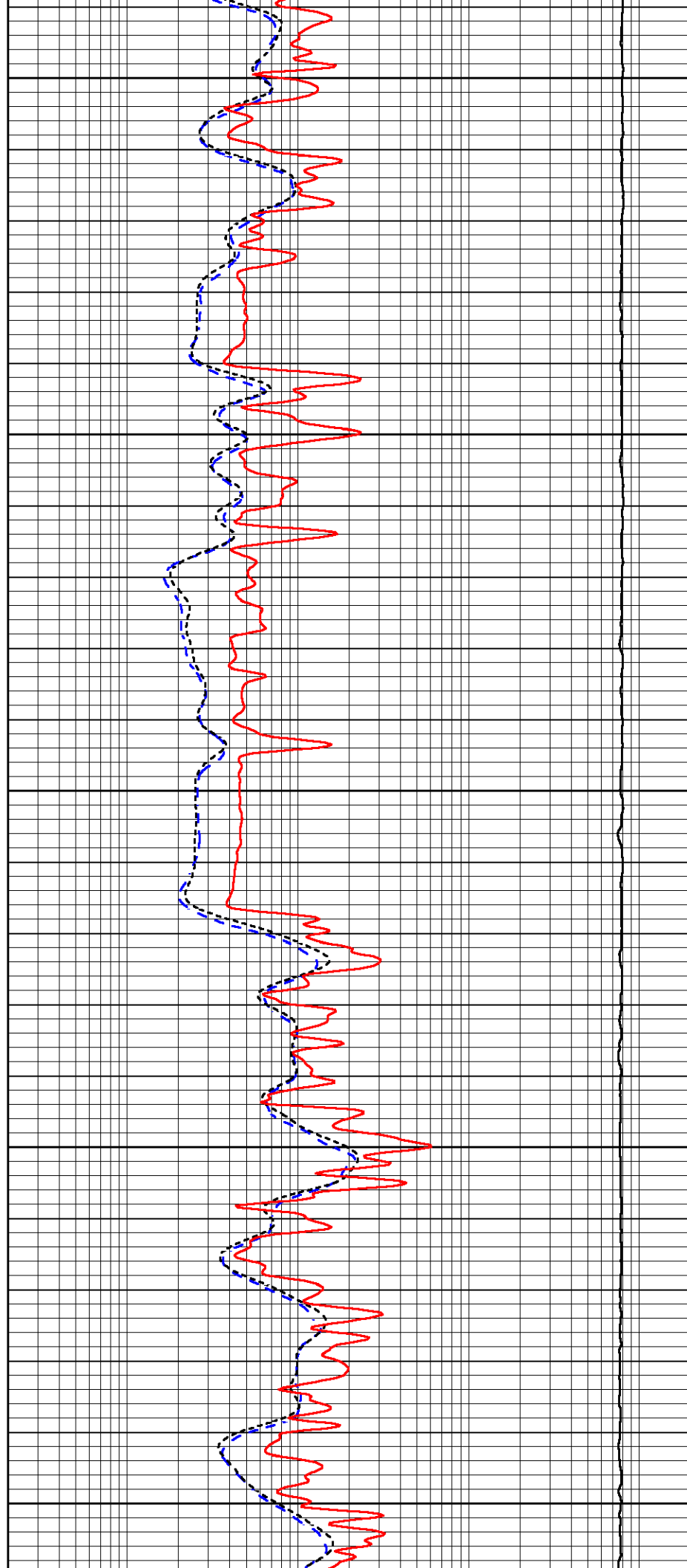
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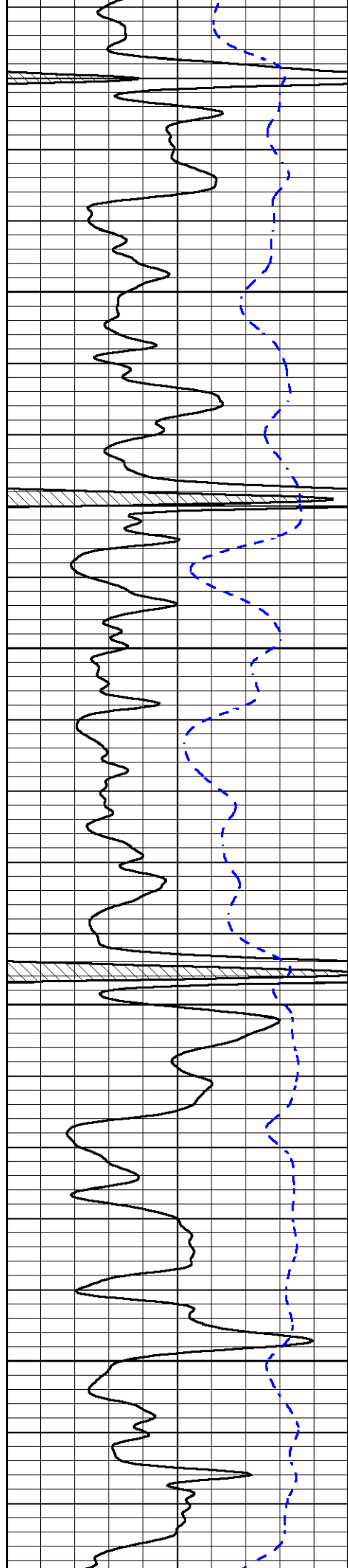
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2900

2950

3000



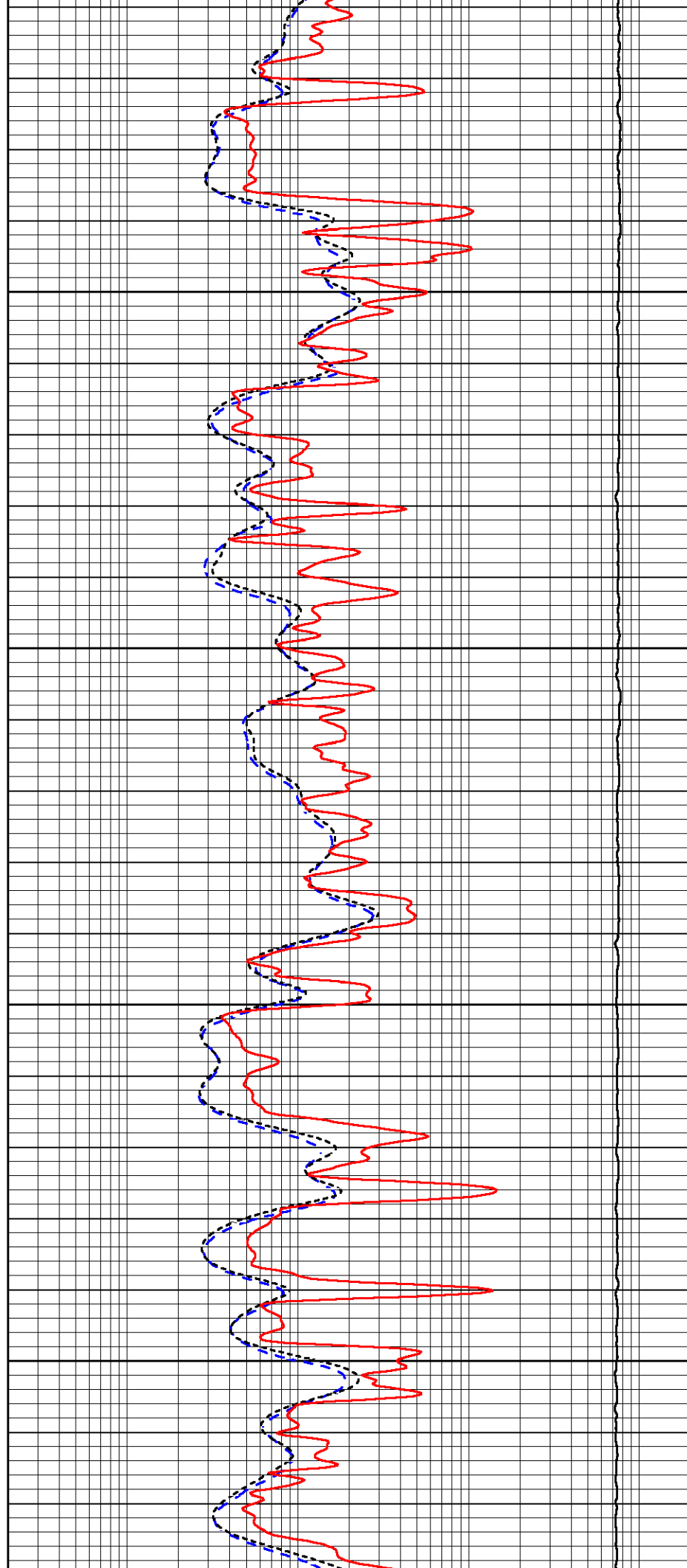


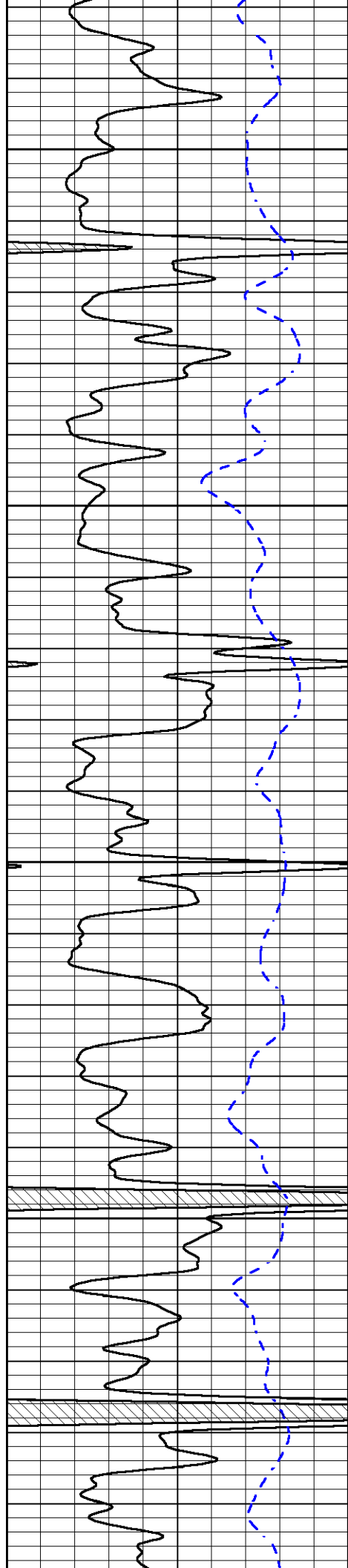
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3100

3150

3200





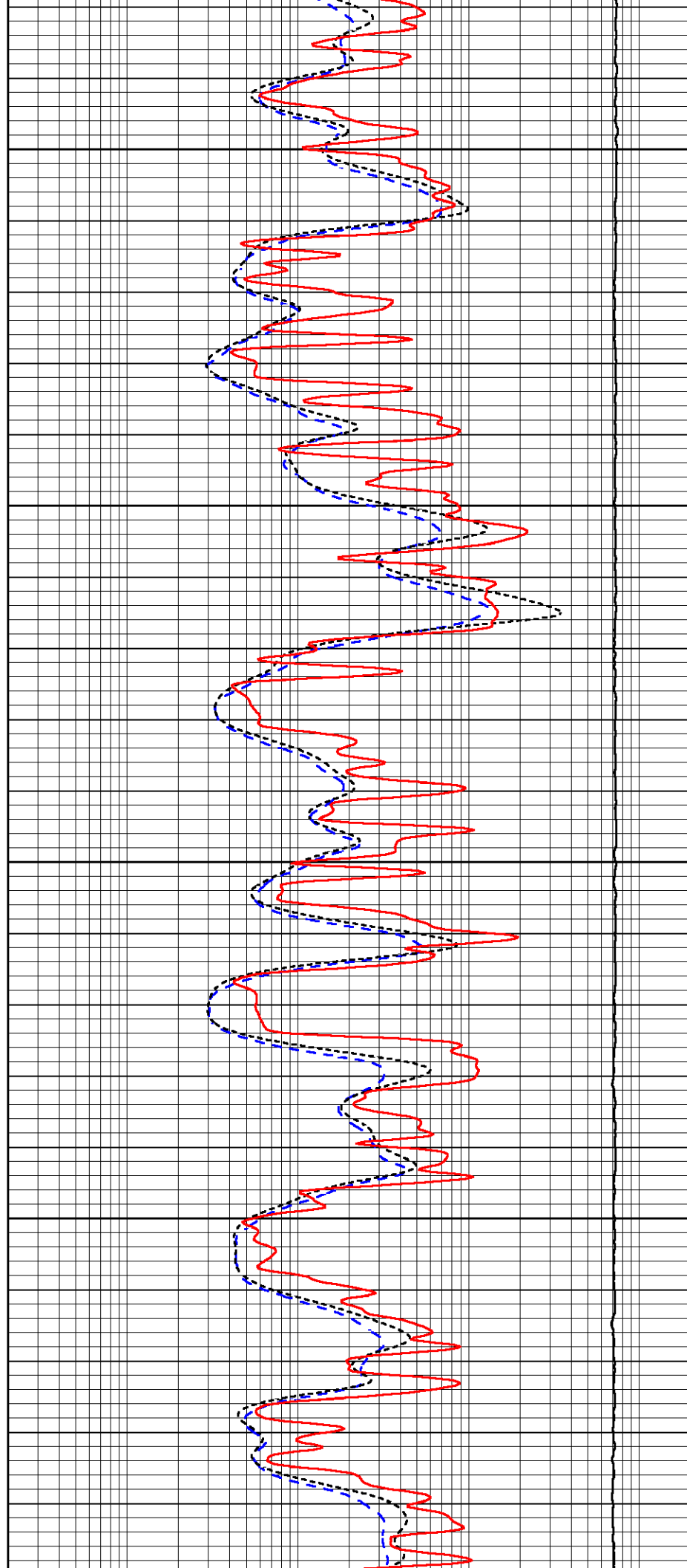
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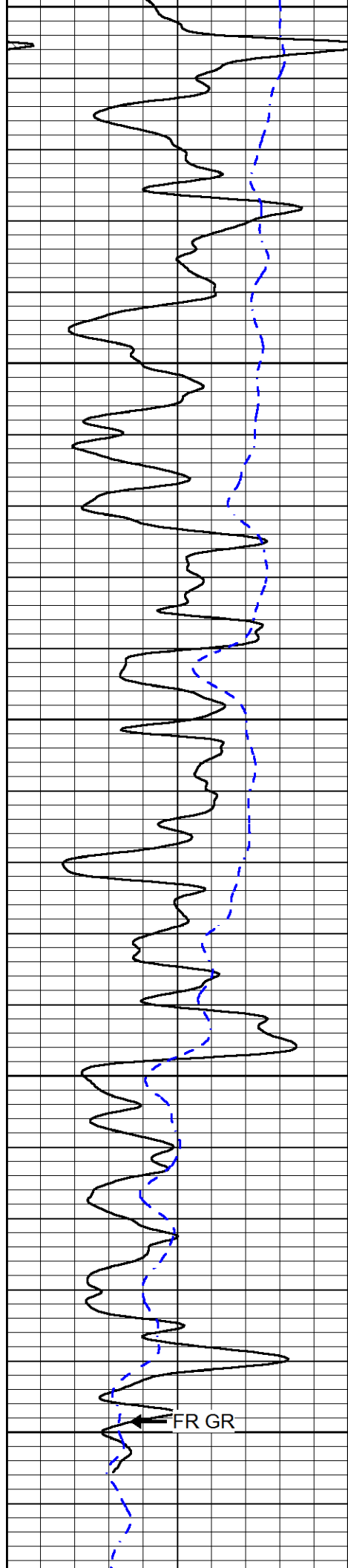
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3350

3400

3450





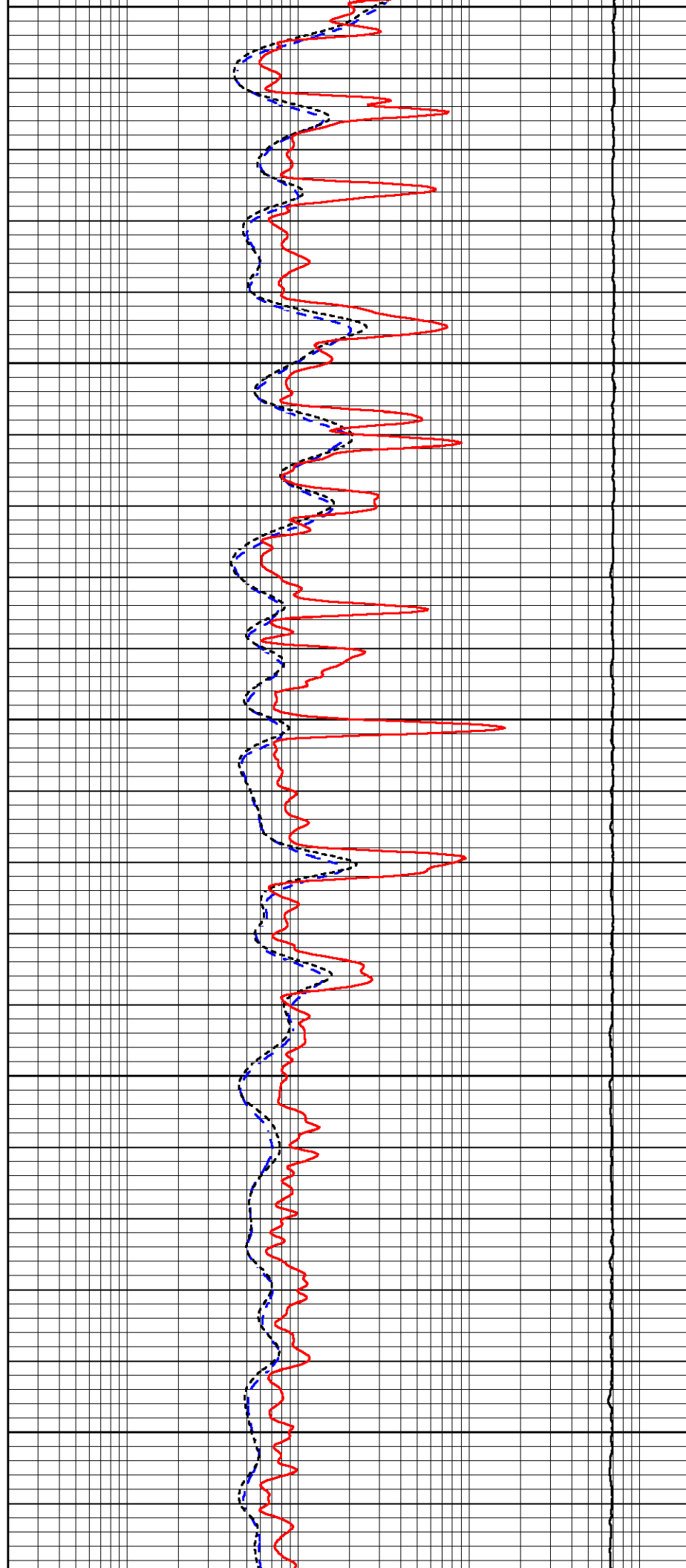
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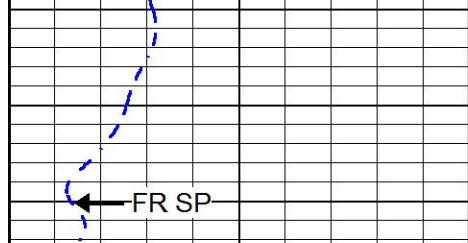
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3550

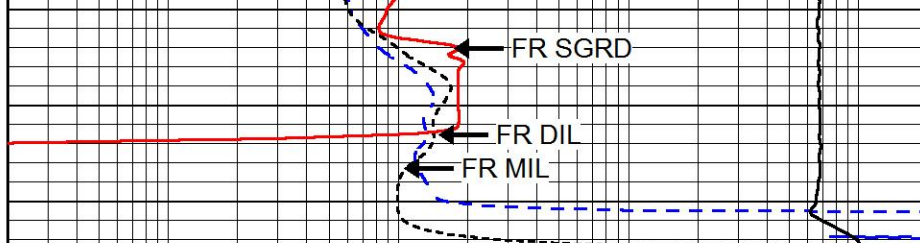
3600

3650





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

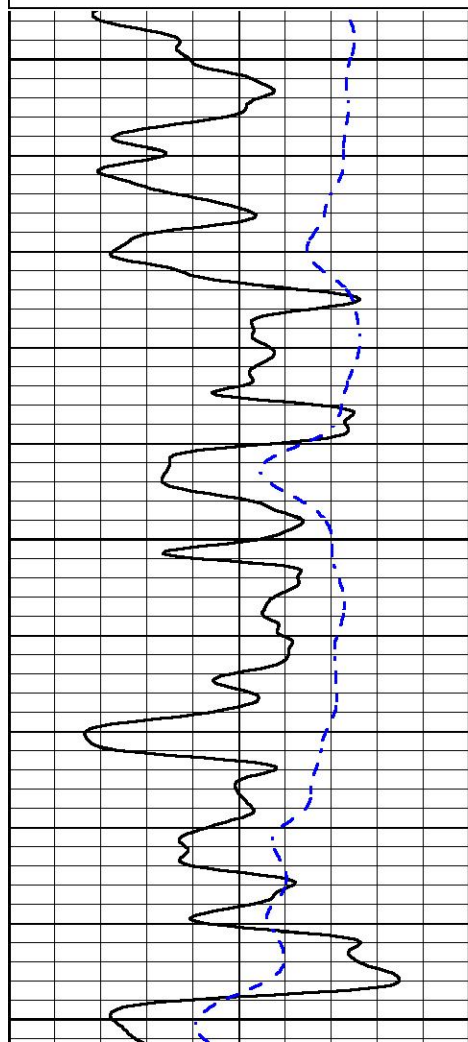


REPEAT SECTION

Database File gulf_explo_griffin_trust_1_30.db
 Dataset Pathname stackml/pass2.1
 Presentation Format dil
 Dataset Creation Sun Mar 04 09:46:29 2018
 Charted by Depth in Feet scaled 1:240

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-200	SP (mV)	0

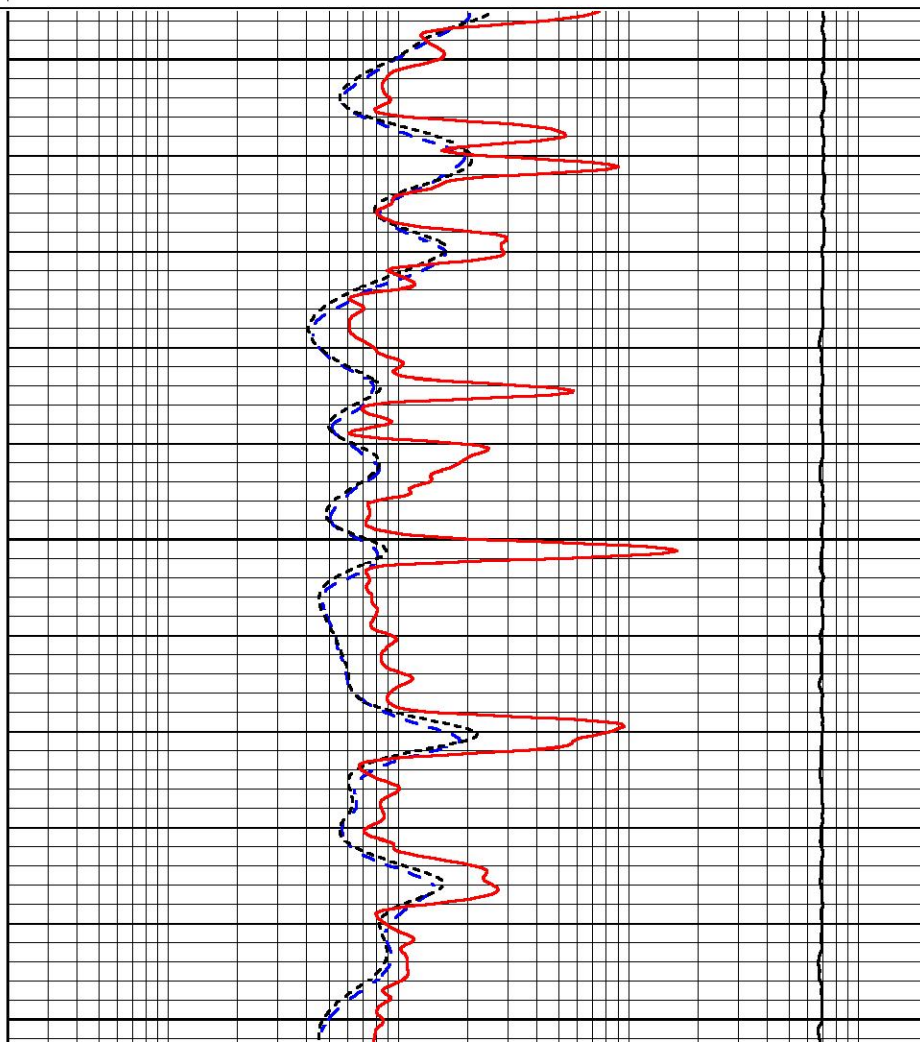
0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
15000	LINE TENSION (lb)	0

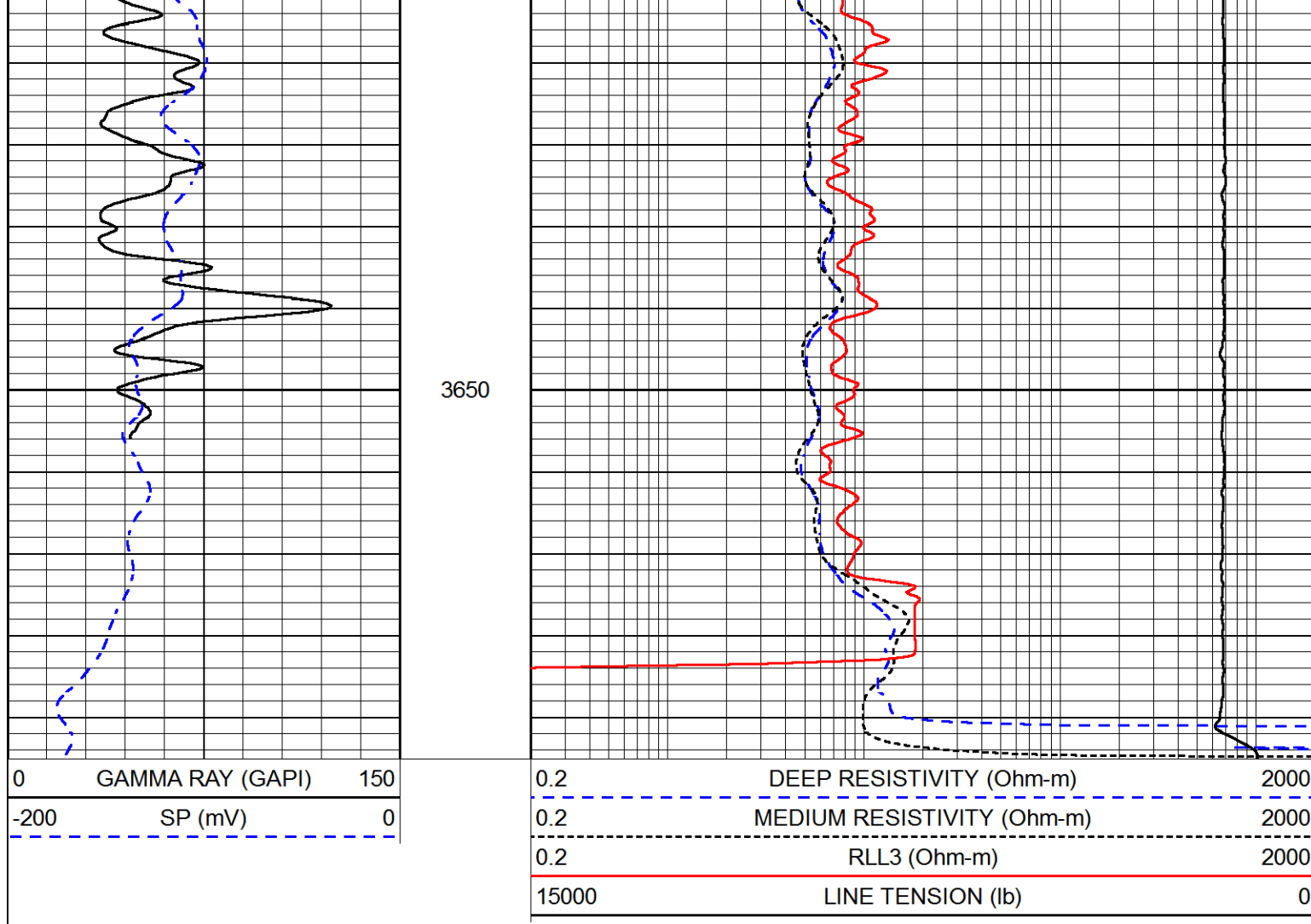


3500

3550

3600





Calibration Report	
Database File	gulf_explo_griffin_trust_1_30.db
Dataset Pathname	stackml/pass3.1
Dataset Creation	Sun Mar 04 09:46:18 2018

Dual Induction Calibration Report	
Serial-Model:	PSI 978-M&W
Calibration Performed:	Sun Feb 04 11:50:02 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.570	-40.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.400	-37.000

Microlog Calibration Report	
Serial-Model:	PSI-02-PSI STKBL ML
Performed:	Fri Jun 23 01:25:19 2017

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	16000.0000	-0.8000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	12000.0000	0.0000
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-131.6000

Compensated Density Calibration Report

Serial-Model: 168-986-M&W
Source / Verifier: /
Master Calibration Performed: Tue Apr 11 17:07:47 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.700	g/cc	859.57	3020.22	cps
Spine Angle = 74.61			Density/Spine Ratio = 0.537		
	Size		Reading		
Small Ring	4.00	in	1.00		
Large Ring	14.00	in	1.20		

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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State KANSAS