



DUAL INDUCTION LOG

PIONEER
Pioneer Energy Services

Company DAYSTAR PETROLEUM, INC.

Well GRAVES #3

Field DAMME

County FINNEY

State KANSAS

Location: API #: 15-055-22521-00-00

675' FNL & 1251' FEL

SEC 16 TWP 22S RGE 33W

Permanent Datum GROUND LEVEL Elevation 2871'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Other Services
CNL/CDL
MEL
Elevation
K.B. 2882'
D.F. N/A
G.L. 2871'

Date 8/8/2019

Run Number ONE

Depth Driller 4800'

Depth Logger 4799'

Bottom Logged Interval 4798'

Top Log Interval 350'

Casing Driller 8.625" @ 394'

Casing Logger 392'

Bit Size 7.875"

Type Fluid in Hole CHEMICAL

Salinity, ppm CL 2900

Density / Viscosity 9.1 60

pH / Fluid Loss 9.0 10.0

Source of Sample FLOWLINE

Rm @ Meas. Temp .90 @ 74

Rmt @ Meas. Temp .68 @ 74

Rmc @ Meas. Temp 1.22 @ 74

Source of Rmt / Rmc CHARTS

Rm @ BHT .54 @ 124

Operating Rig Time 2 HOURS

Max Rec. Temp. F 124 DEGF

Equipment Number P-108

Location HAYS

Recorded By J. HENRICKSON

Witnessed By JON CHRISTENSEN

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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.

GARDEN CITY KANSAS
NORTH TO BARLOW ROAD, 3 WEST TO TANK BATTERY,
3/4 NORTH, 1/4 WEST, NORTH 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: J. HENRICKSON
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: JON CHRISTENSEN
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 124	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 110	degF 78	Off	ft 4799

Sensor	Offset (ft)	Schematic		Description	Length (ft)	O.D. (in)	Weight (lb)
GR	44.50			GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC	41.40			CNT-M&W (tk10-MW)	5.50	3.50	100.00
CNSSC	40.65						
LSD	32.35			CDL-M&W (979-229)	8.50	4.00	250.00
DCAL	32.33			ML-PSI UDM ML (UDM-01)	11.50	4.00	215.00
SSD	31.85			Stackable Microlog Tools			
MCAL	20.87						
MI	20.87						
MN	20.87						
RLL3	15.80			DIL-M&W (PSI 988)	18.50	3.50	220.00
RLL3F	15.79						
CILD	8.00						

CILM

4.70

SP

0.20

Dataset: daystar_graves_3.db: field/well/stackml/pass3.1
Total length: 47.00 ft
Total weight: 835.00 lb
O.D.: 4.00 in



MAIN PASS

Database File daystar_graves_3.db
Dataset Pathname stackml/pass3.1
Presentation Format dil2in
Dataset Creation Thu Aug 08 11:11:03 2019
Charted by Depth in Feet scaled 1:600

0 GAMMA RAY (GAPI) 150

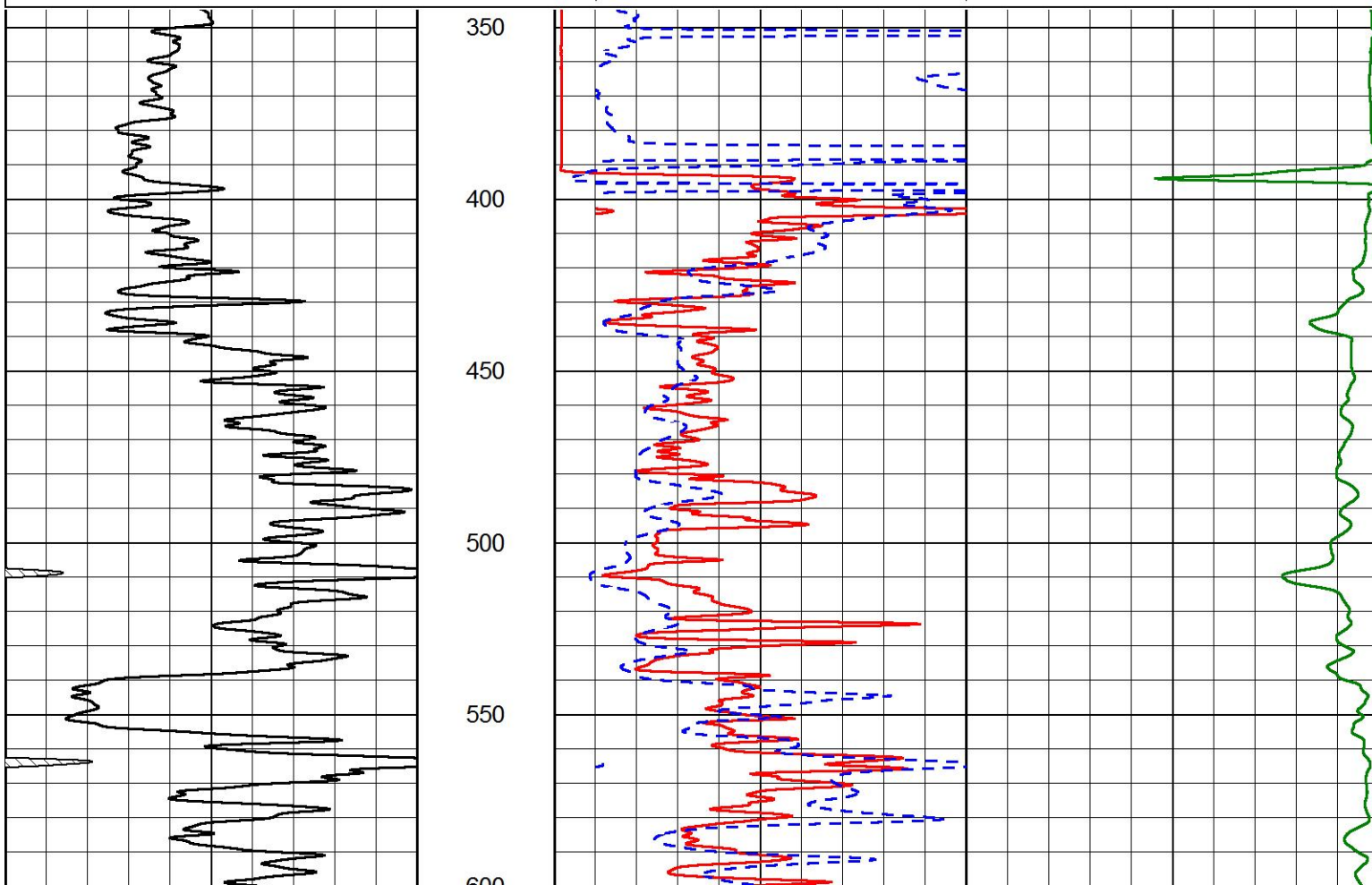
2000 CILD (mmho/m) 0

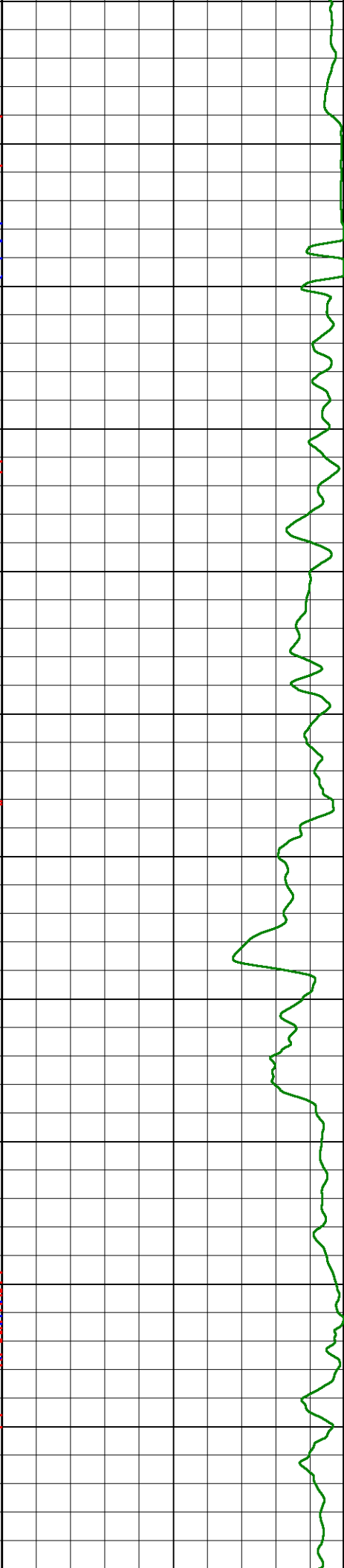
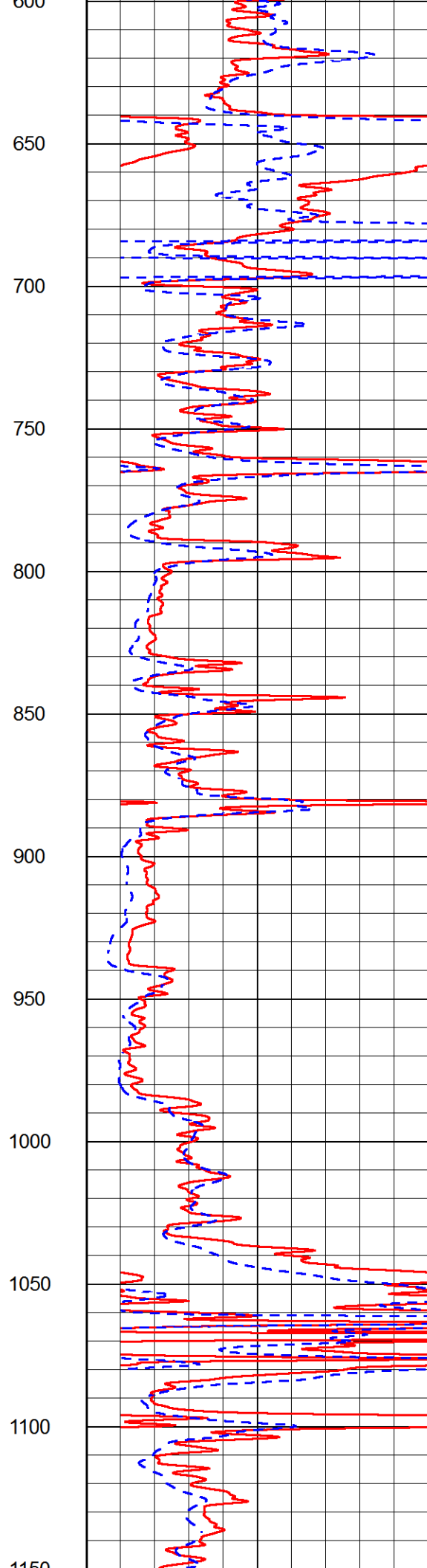
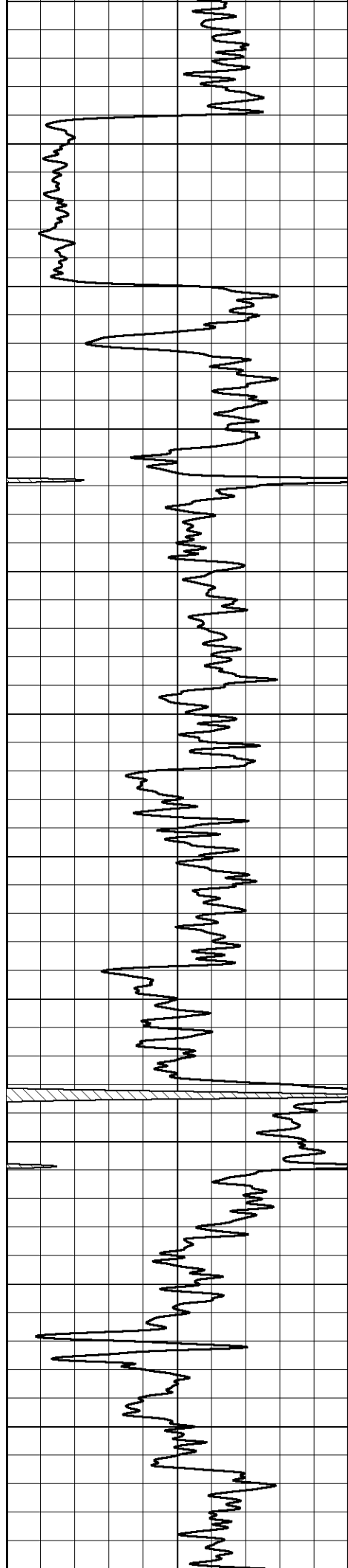
0 RLL3 (Ohm-m) 50

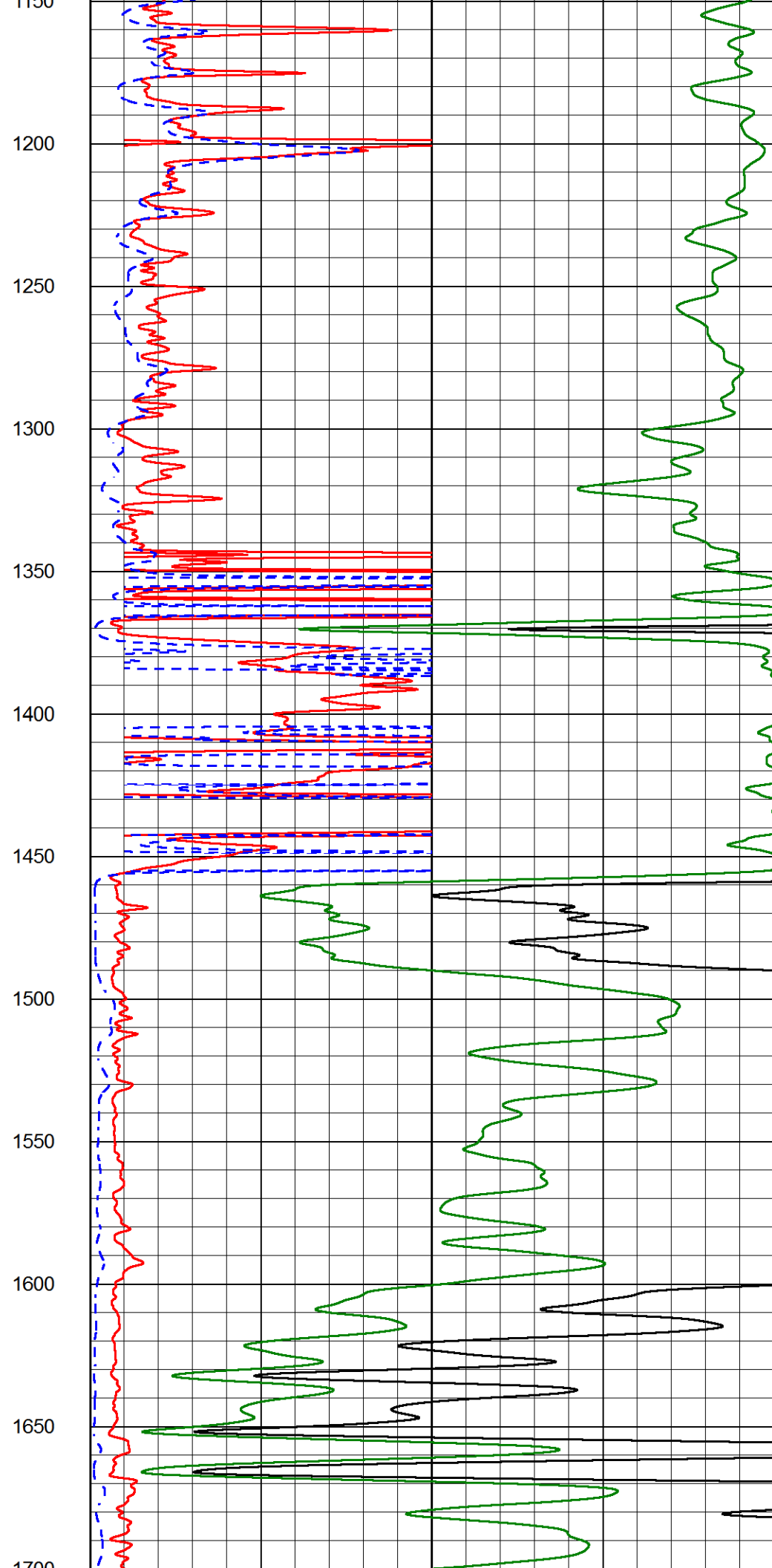
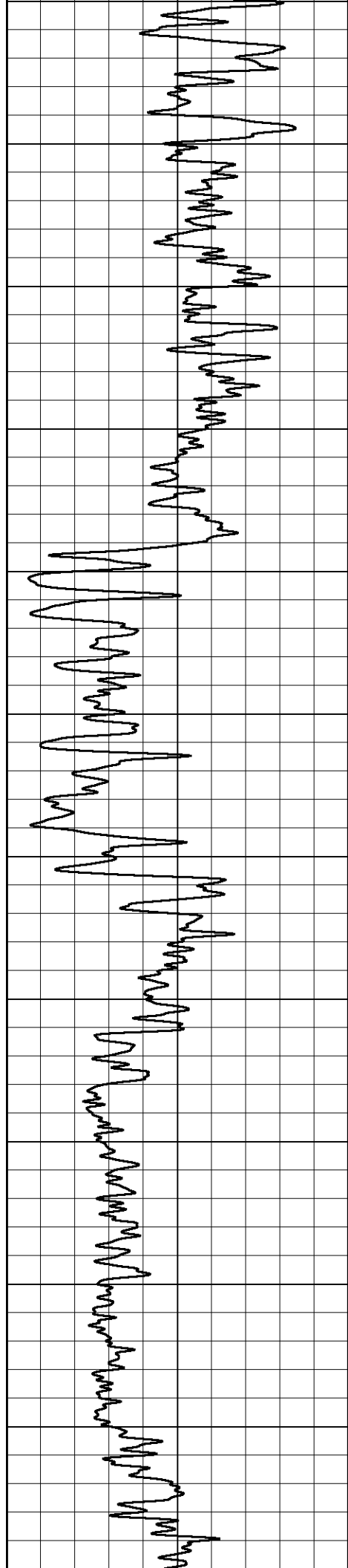
0 DEEP RESISTIVITY (Ohm-m) 50

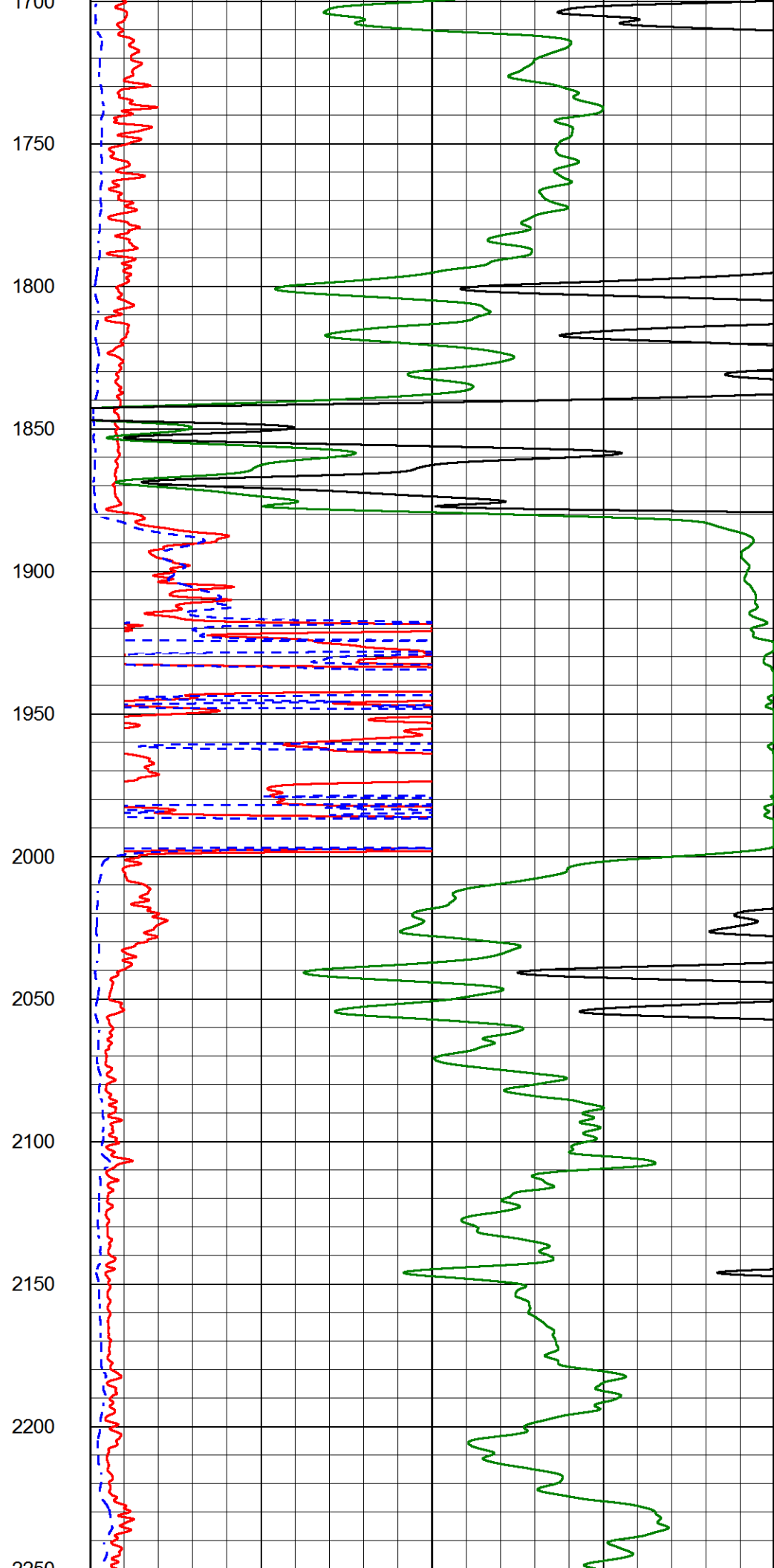
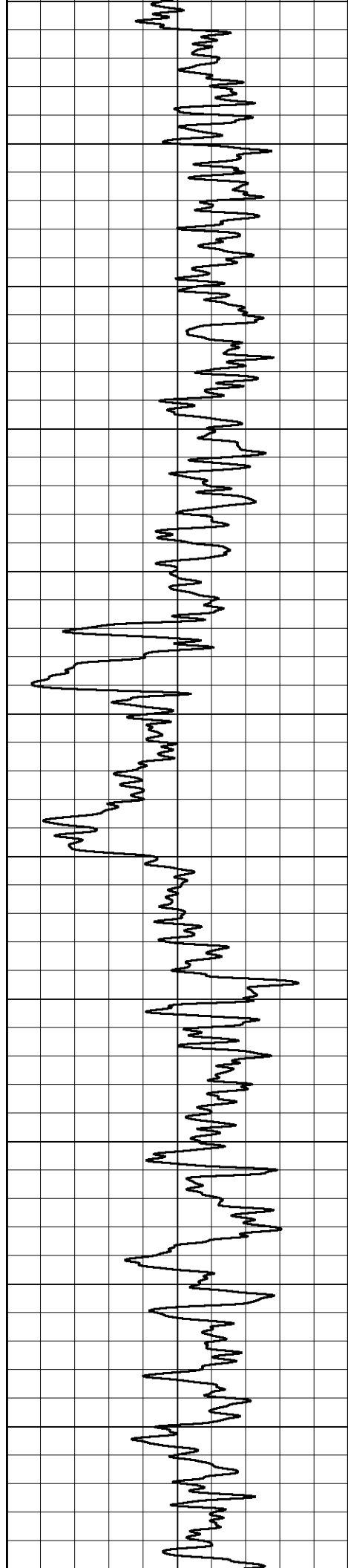
50 RLL3 (Ohm-m) 200

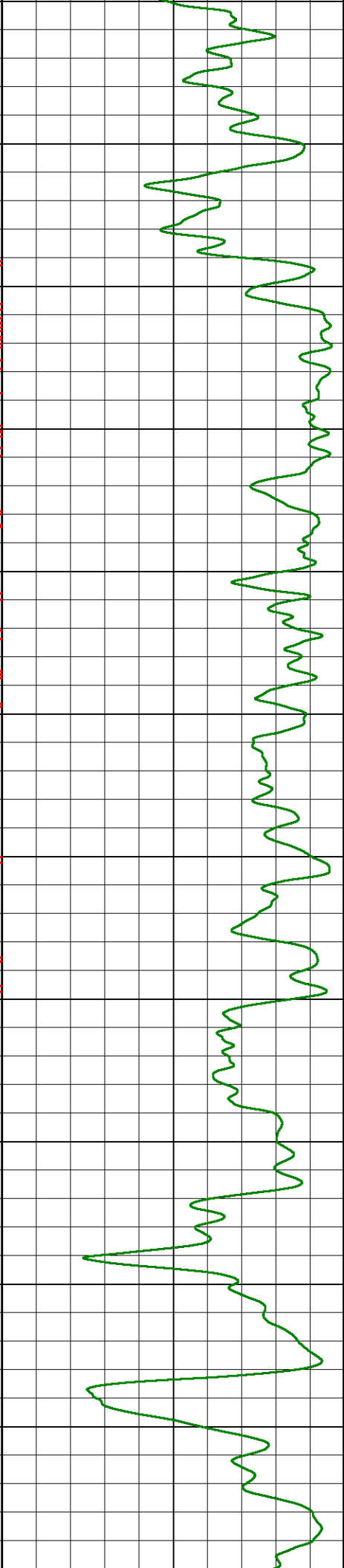
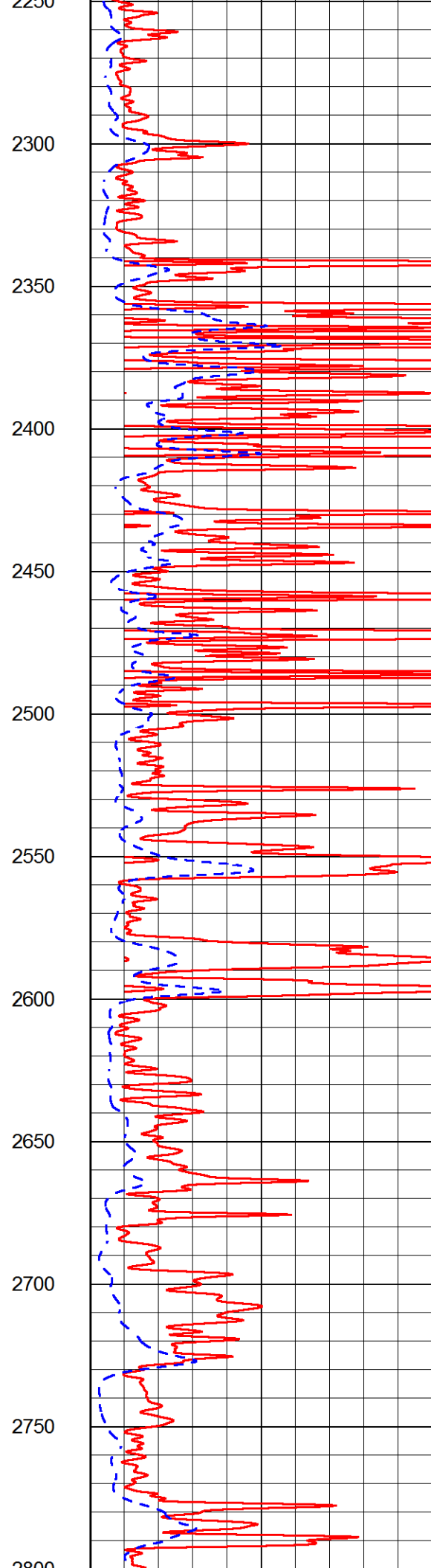
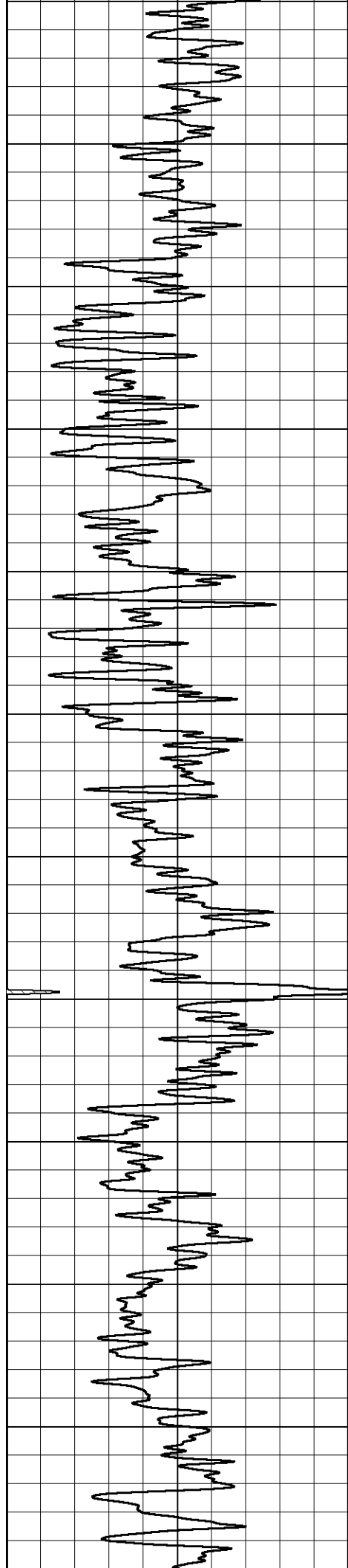
50 RILD (Ohm-m) 200

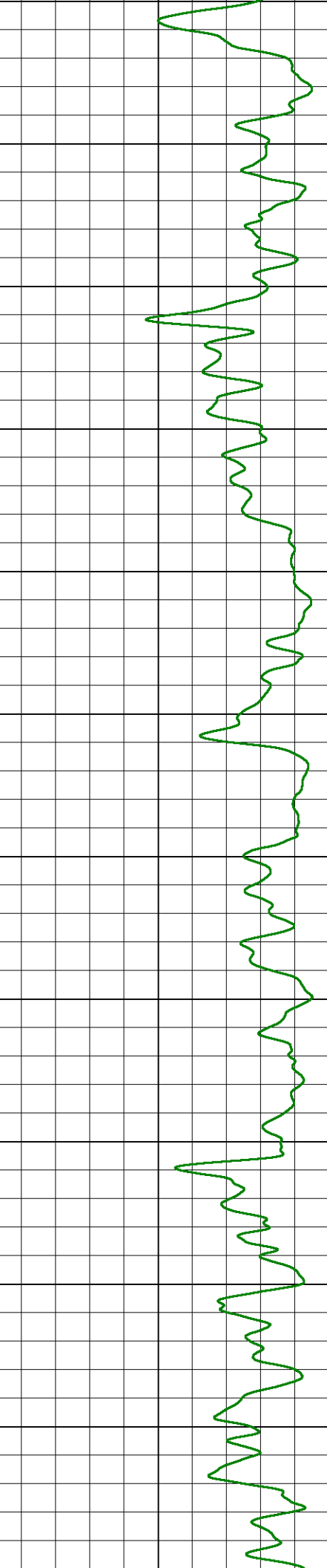
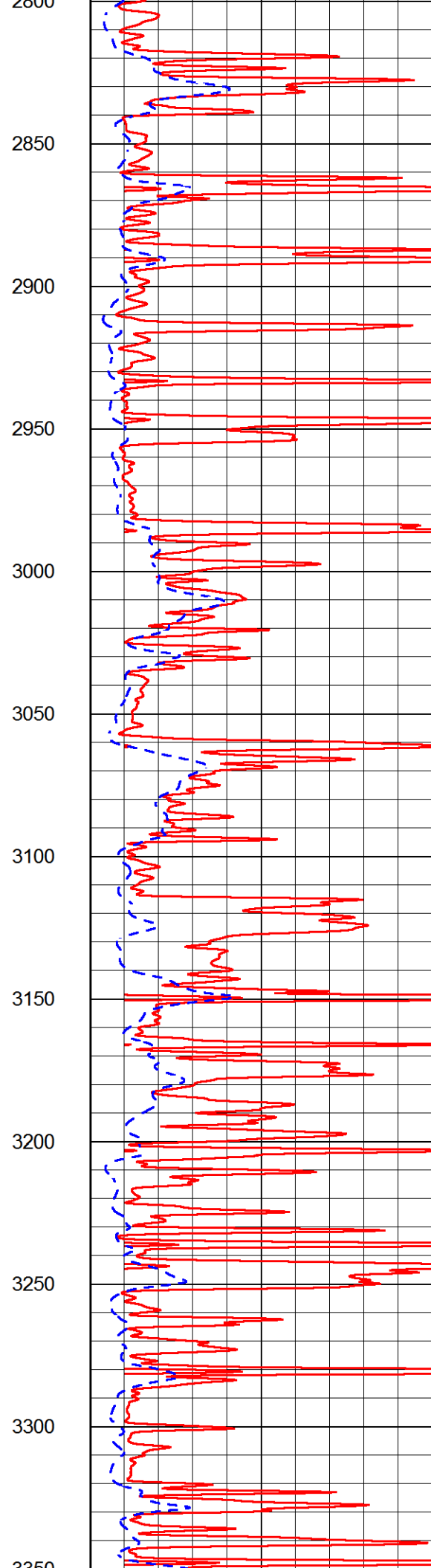
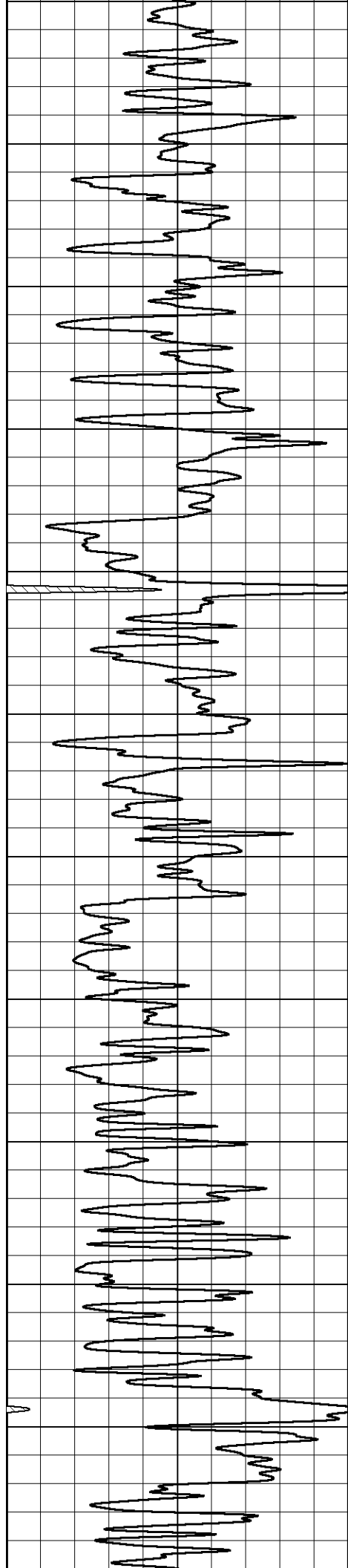


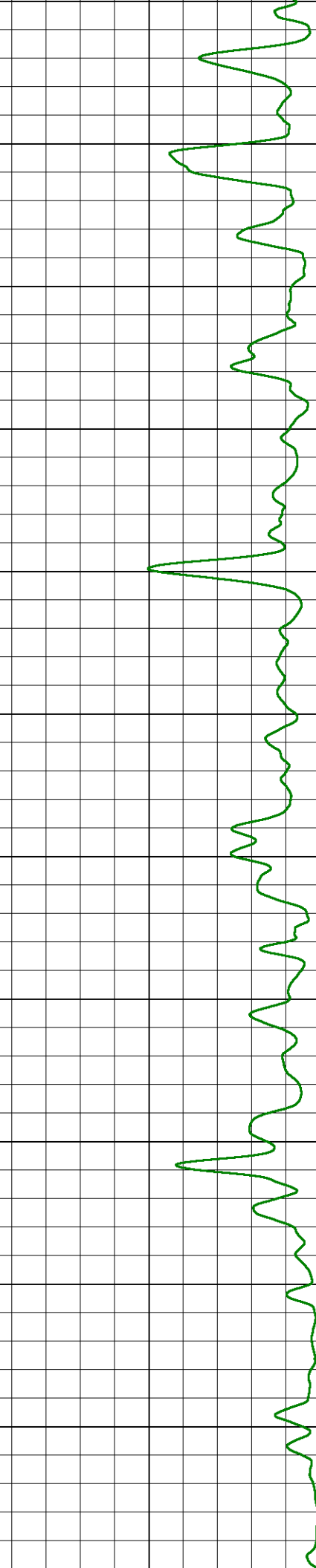
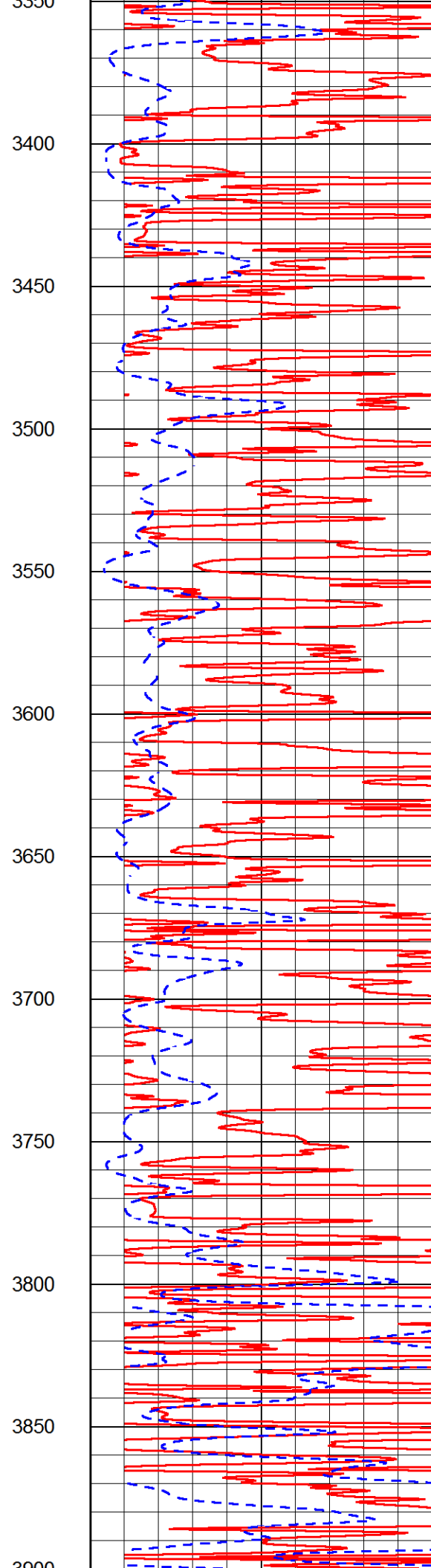
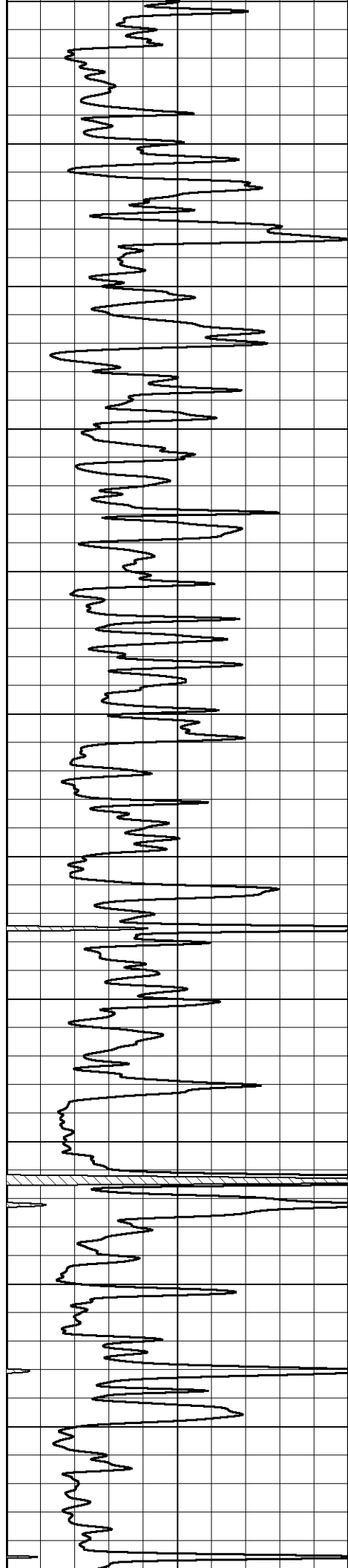


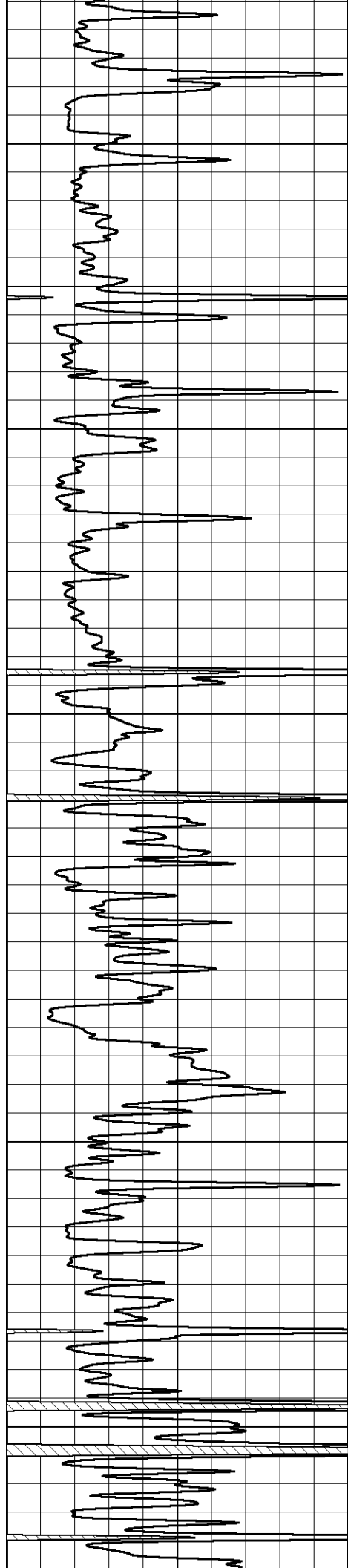




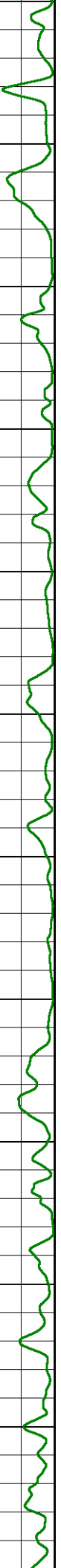
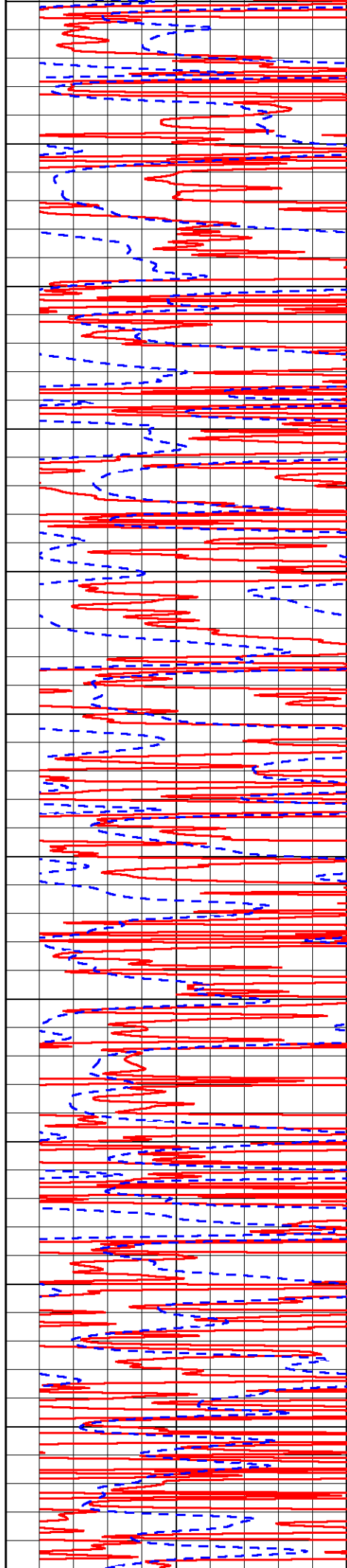


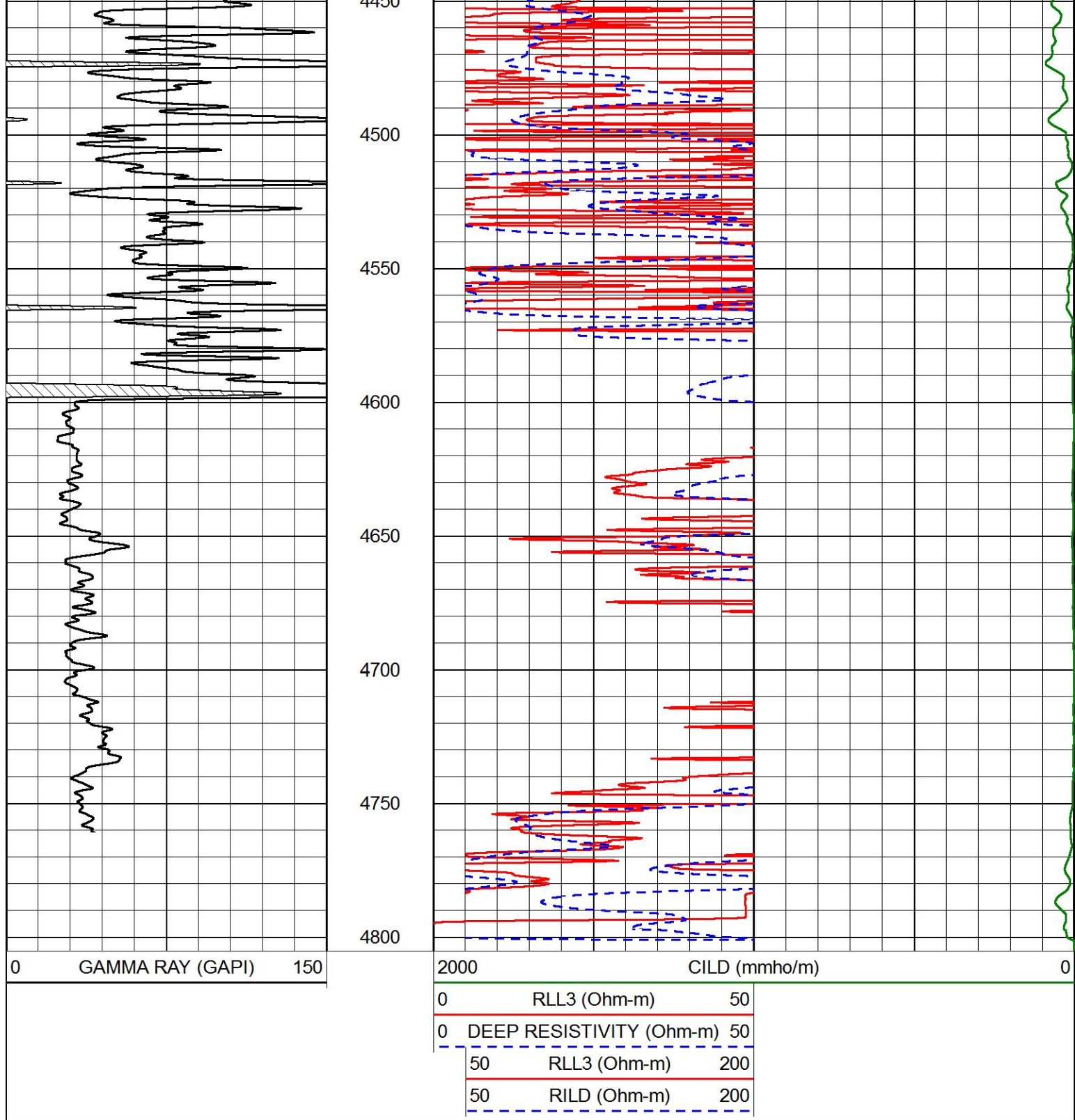






3900
3950
4000
4050
4100
4150
4200
4250
4300
4350
4400
4450





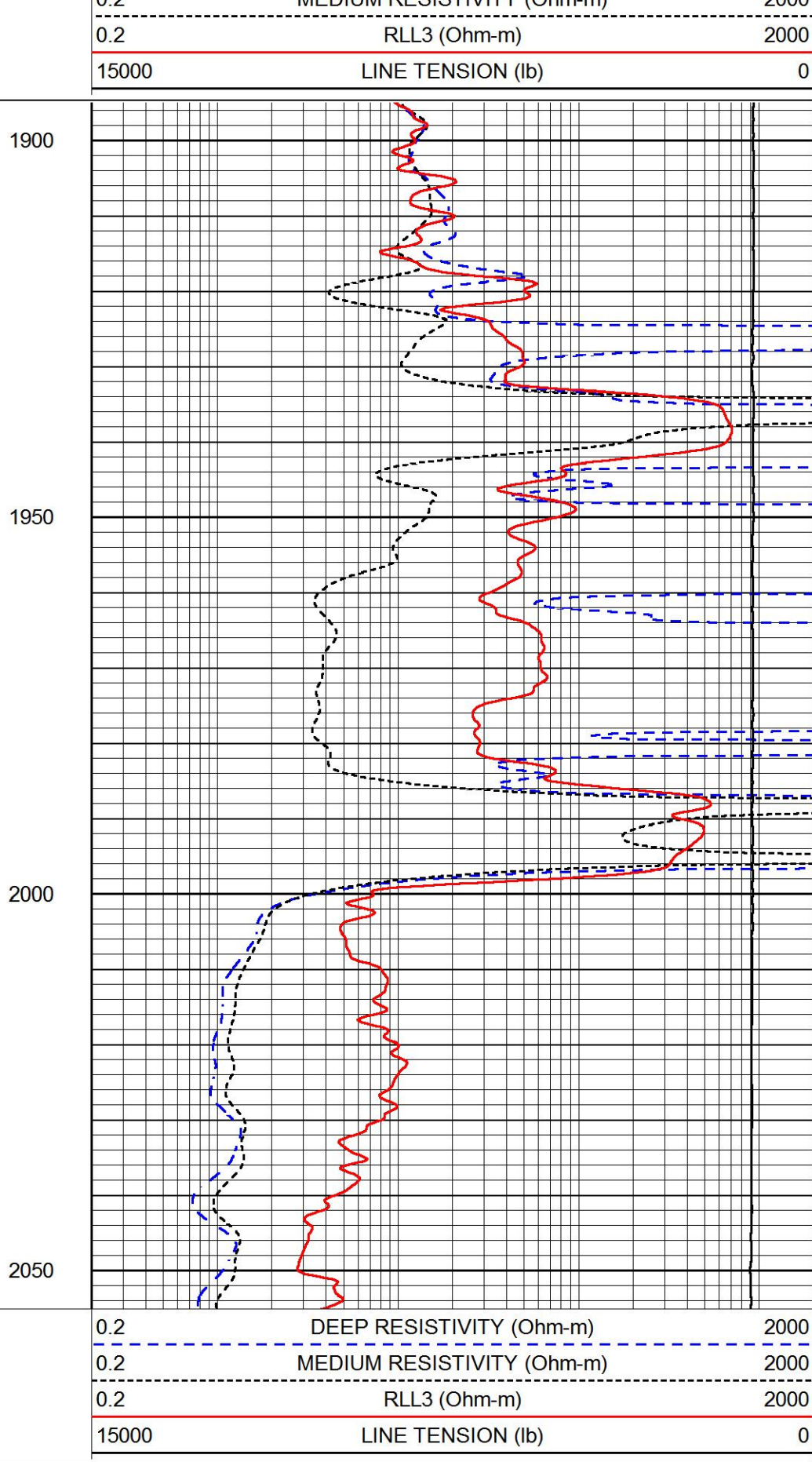
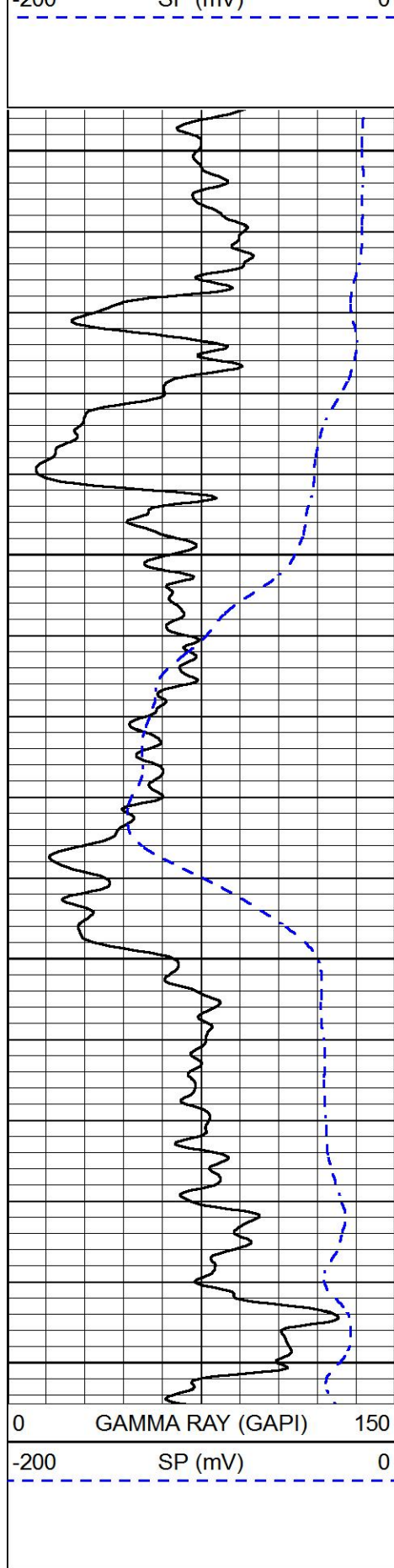


PIONEER
Pioneer Energy Services

MAIN PASS

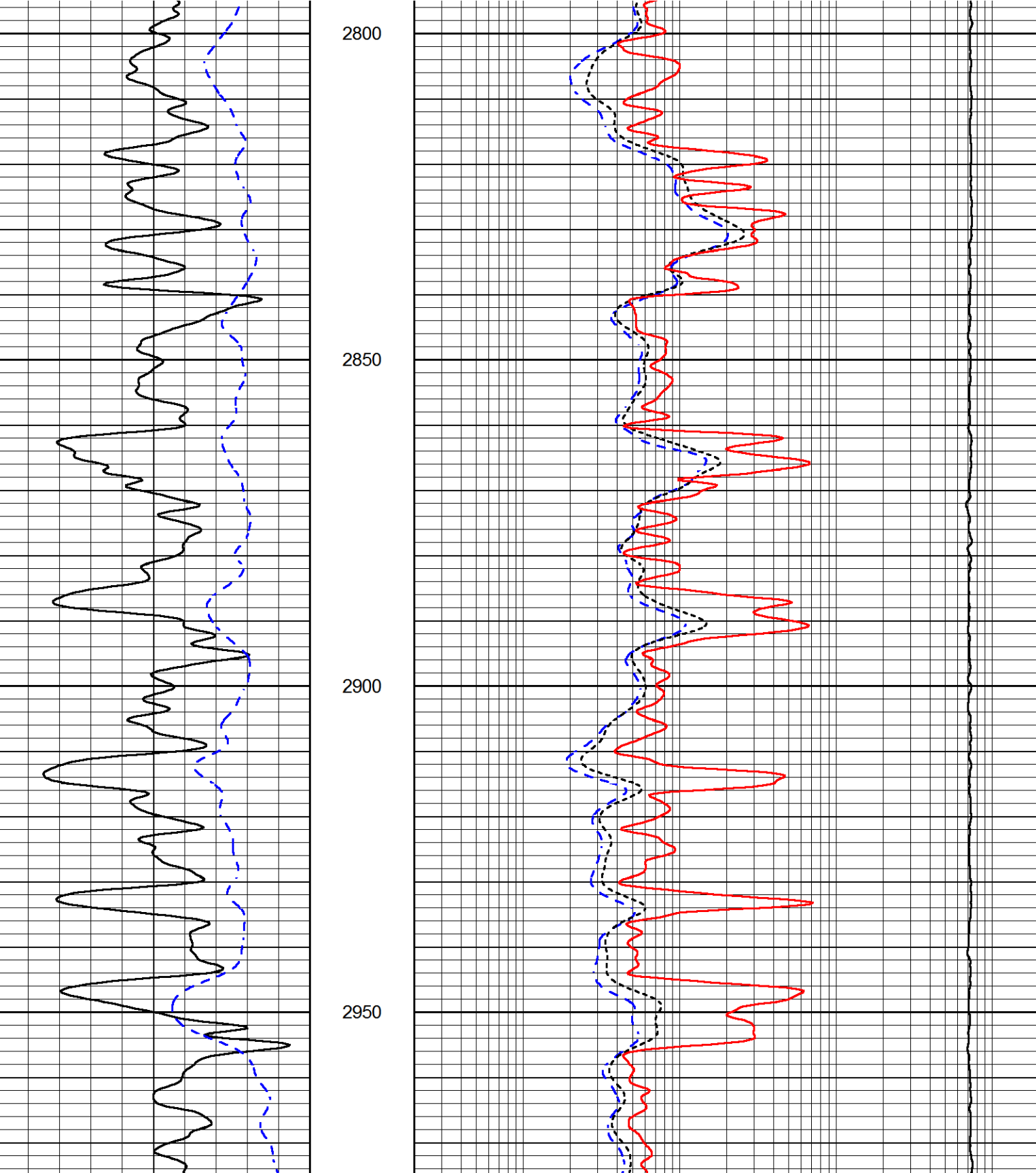
Database File	daystar_graves_3.db
Dataset Pathname	stackml/pass3.1
Presentation Format	dil
Dataset Creation	Thu Aug 08 11:11:03 2019
Charted by	Depth in Feet scaled 1:240

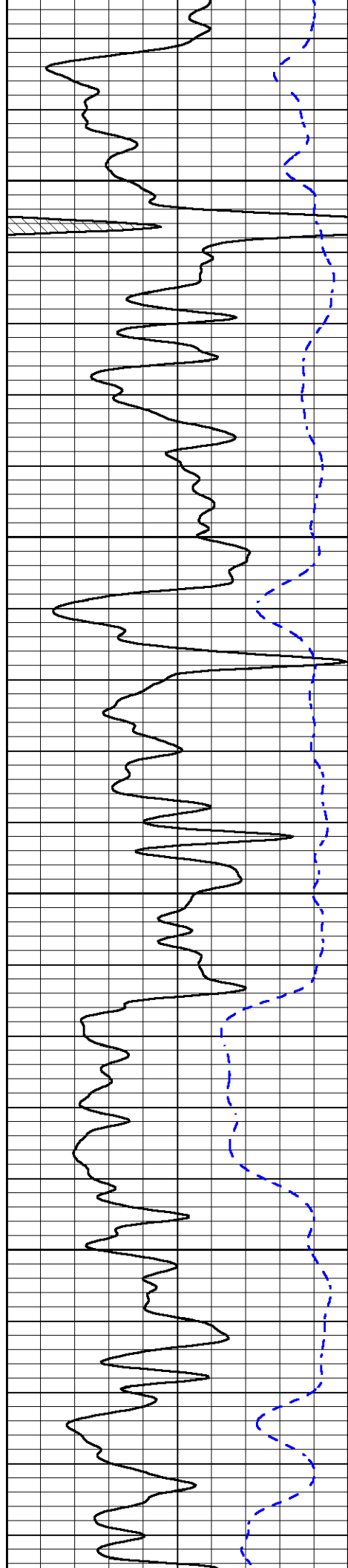




Database File daystar_graves_3.db
Dataset Pathname stackml/pass3.1
Presentation Format dil
Dataset Creation Thu Aug 08 11:11:03 2019
Charted by Depth in Feet scaled 1:240

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



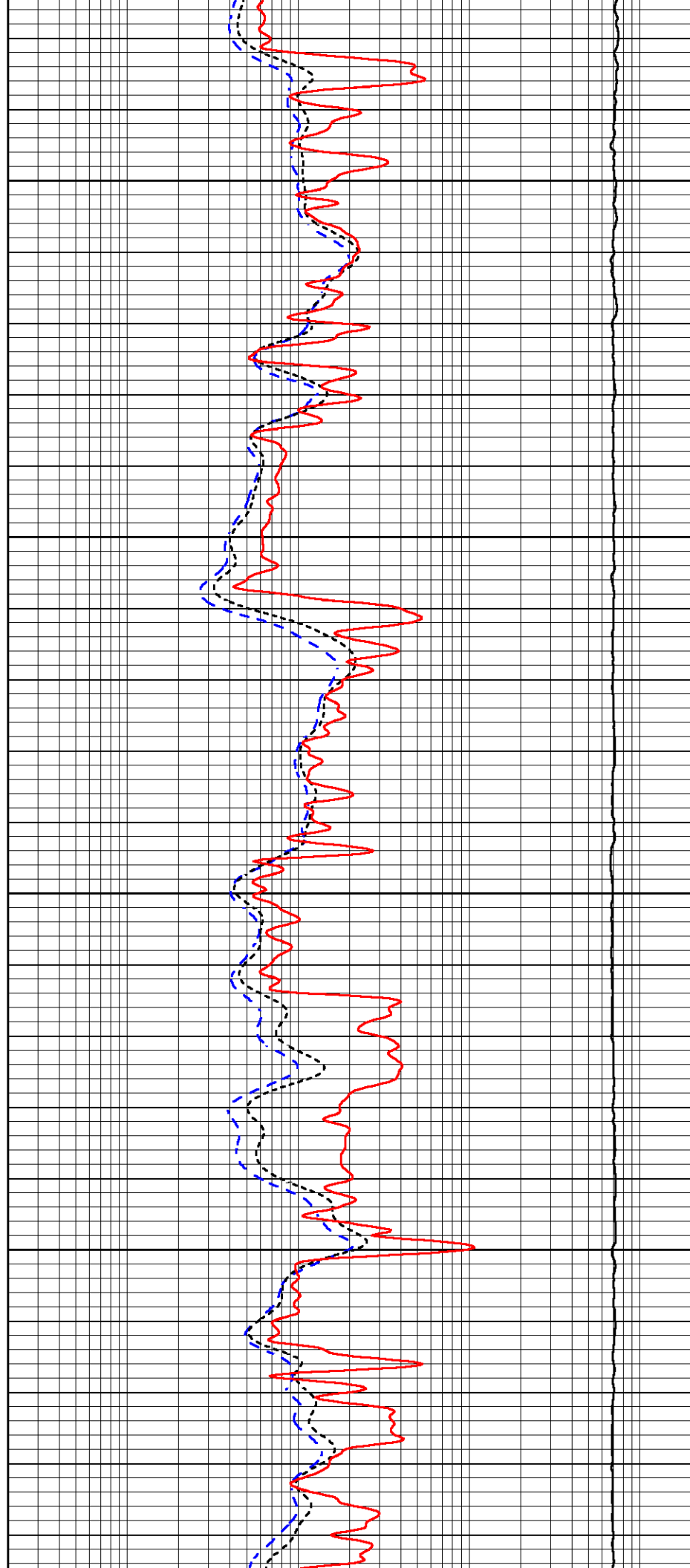


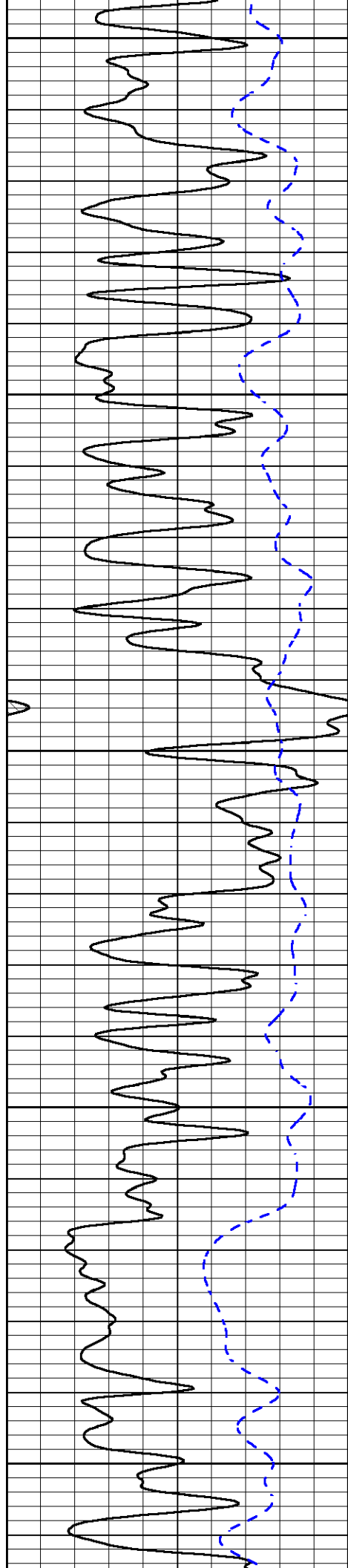
3000

3050

3100

3150





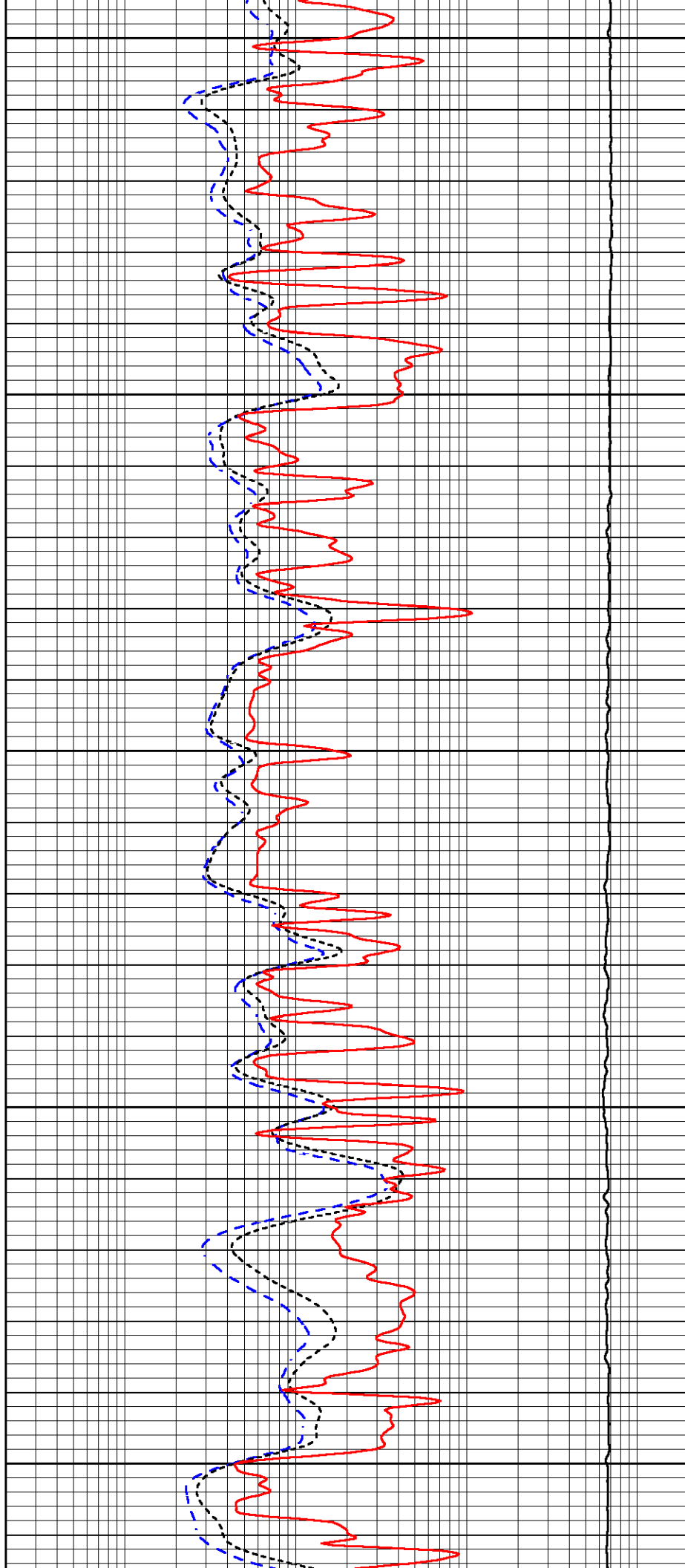
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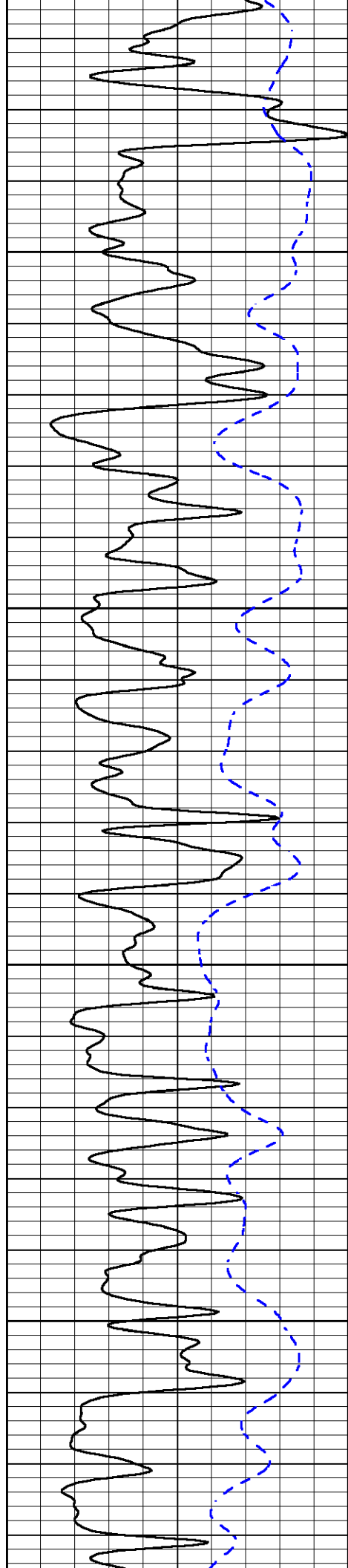
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3300

3350

3400



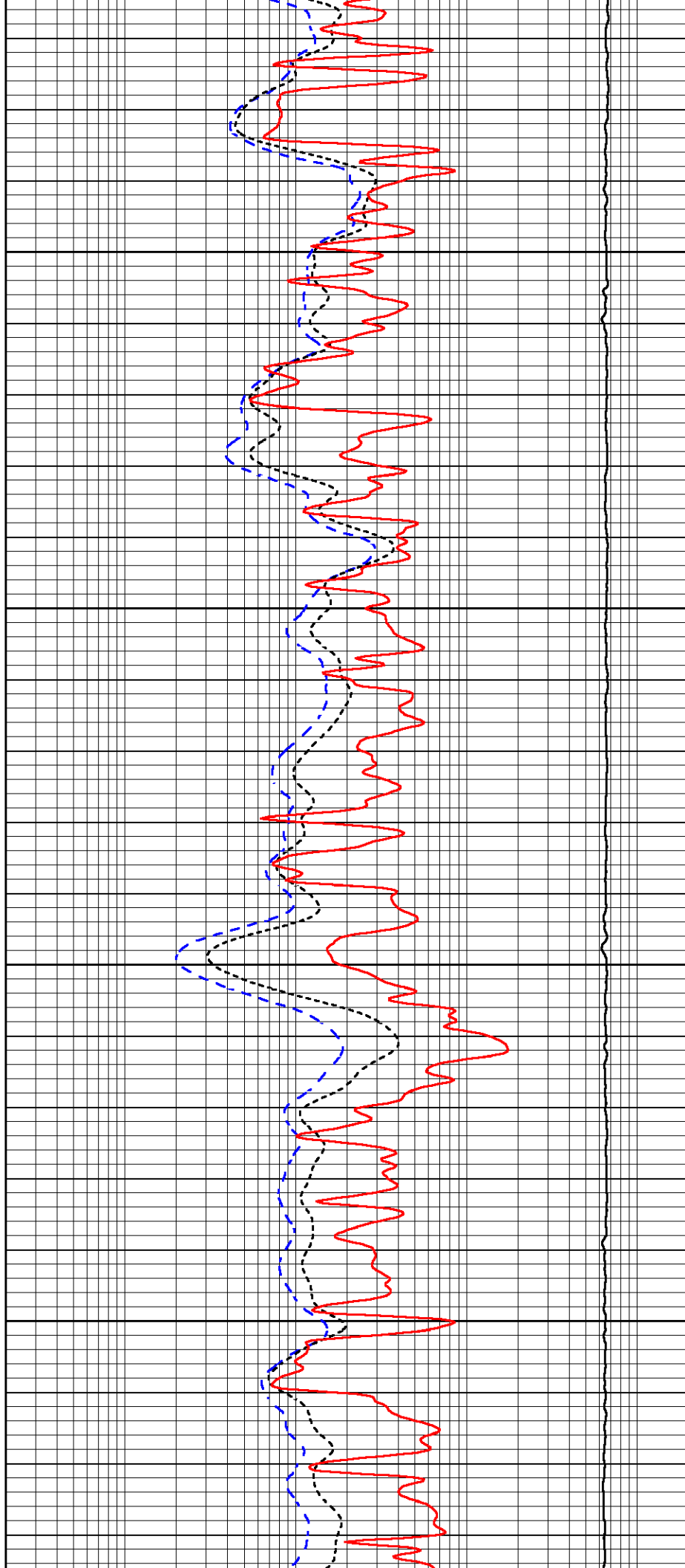


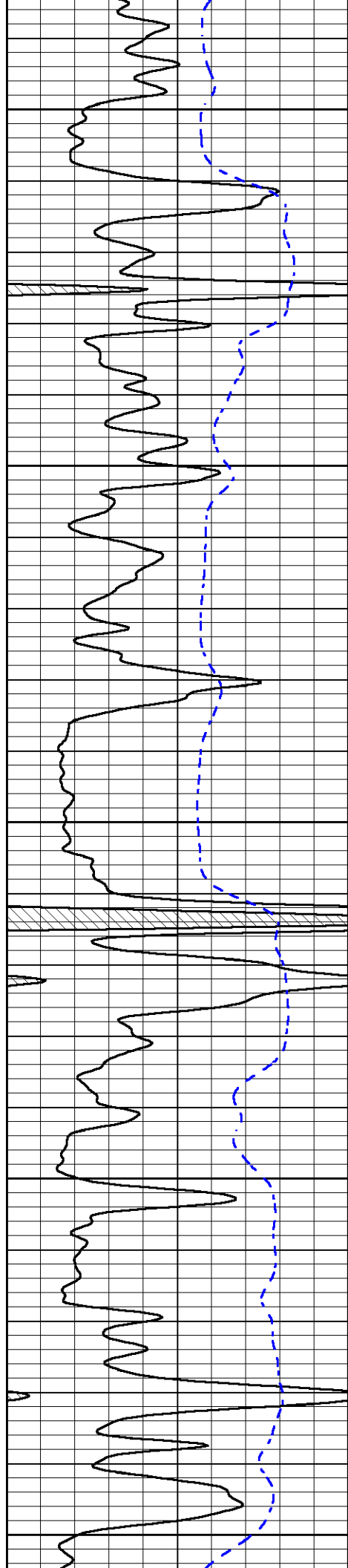
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3500

3550

3600





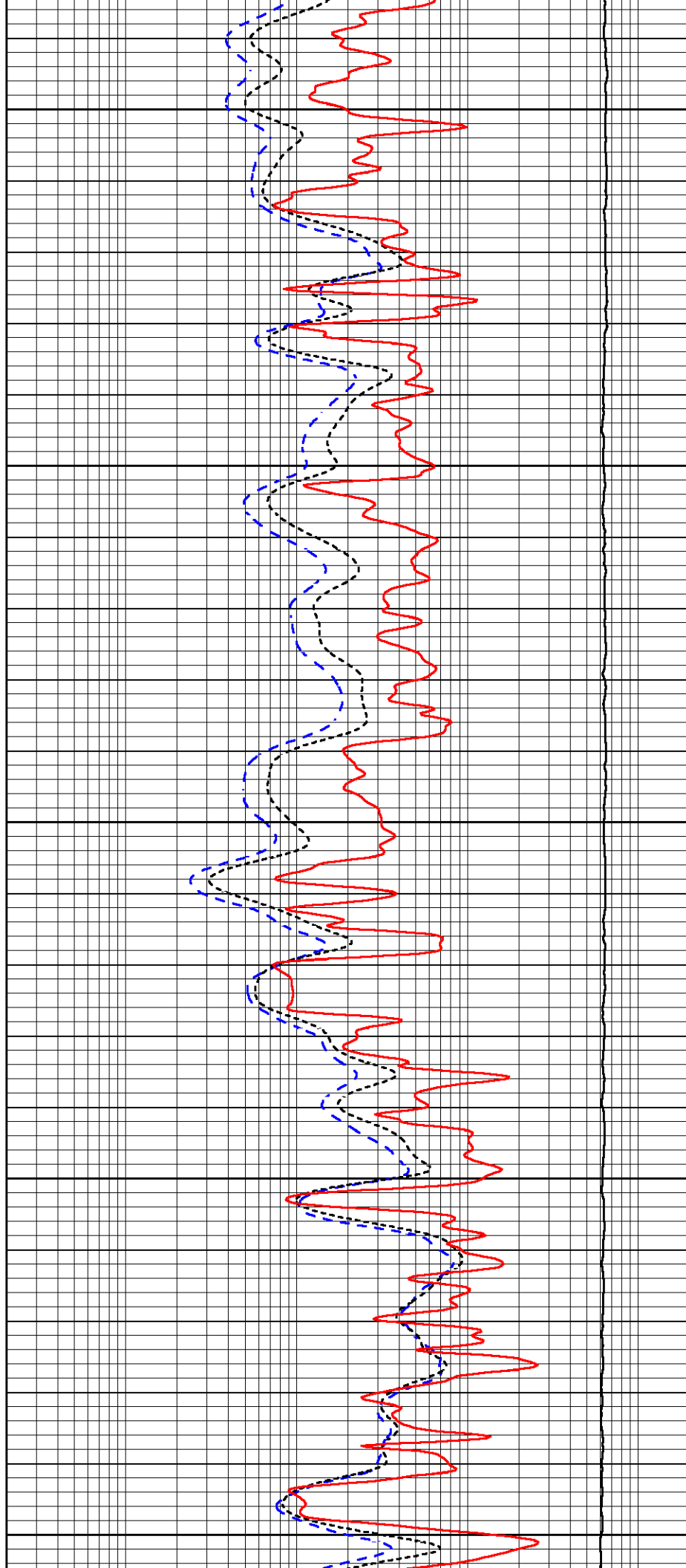
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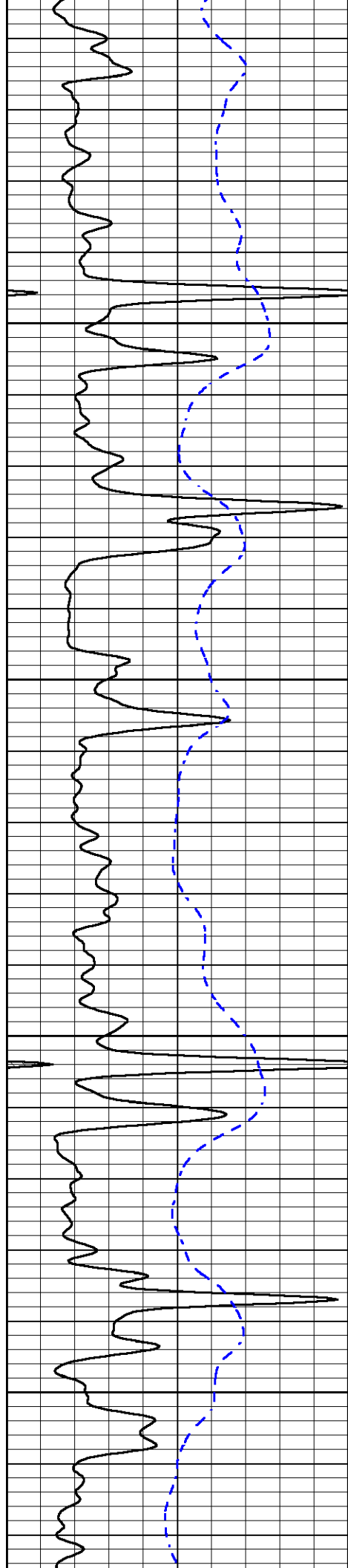
3700

3750

3800

3850



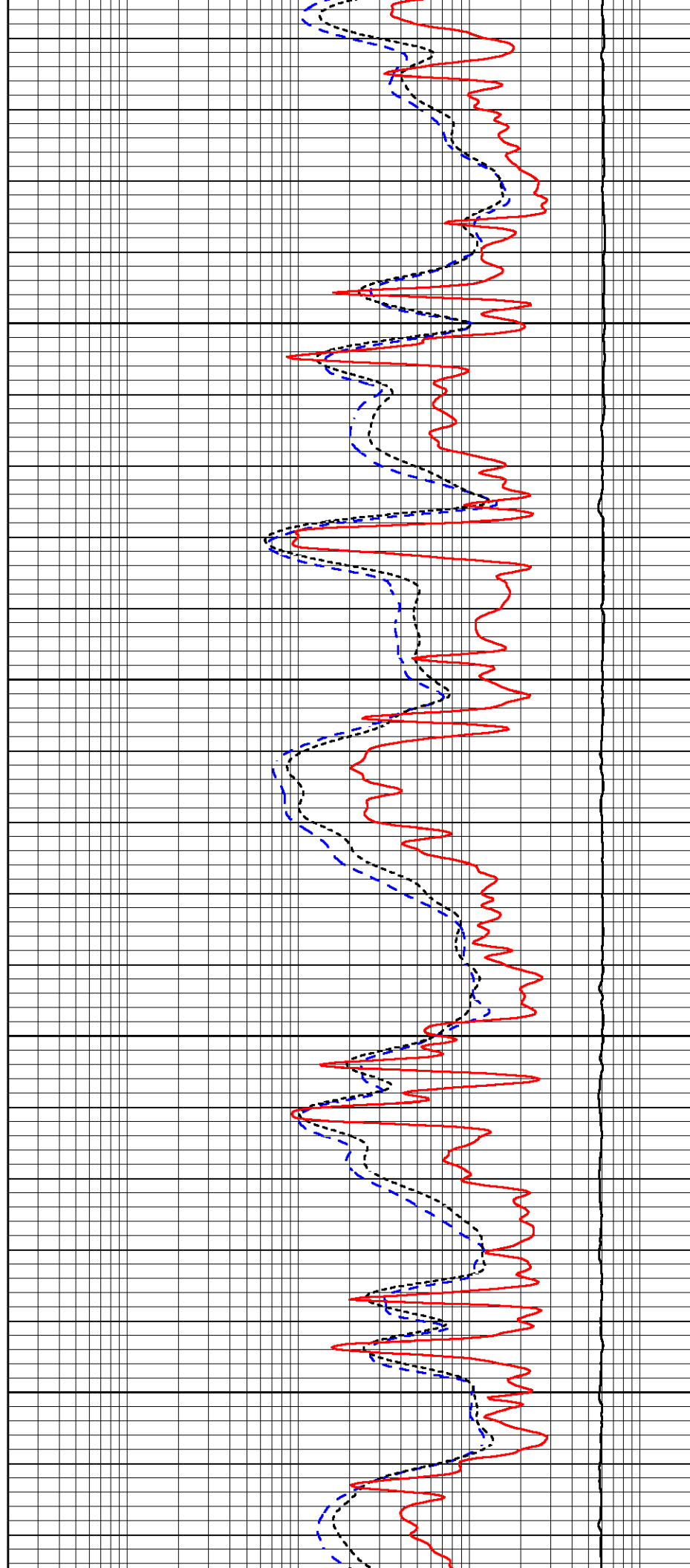


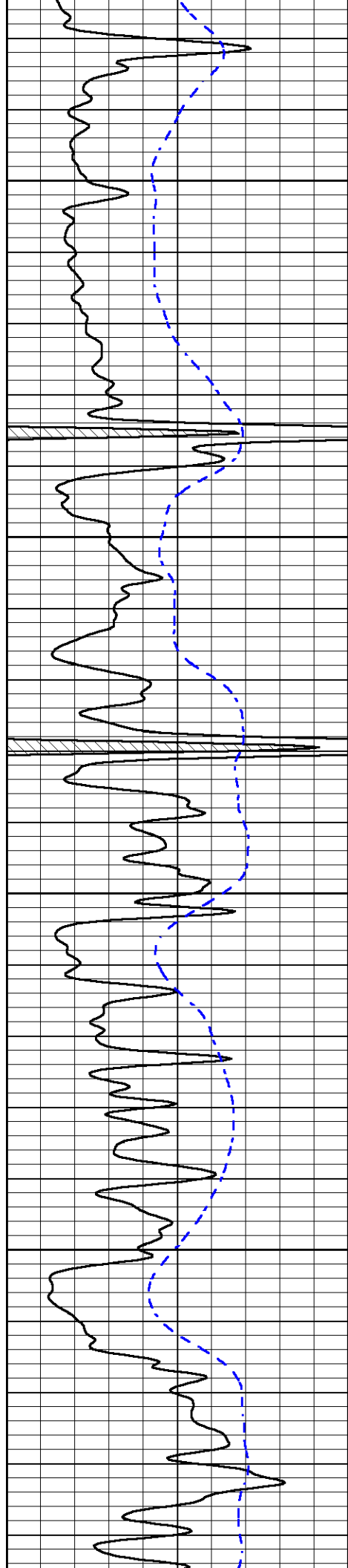
3900

3950

4000

4050



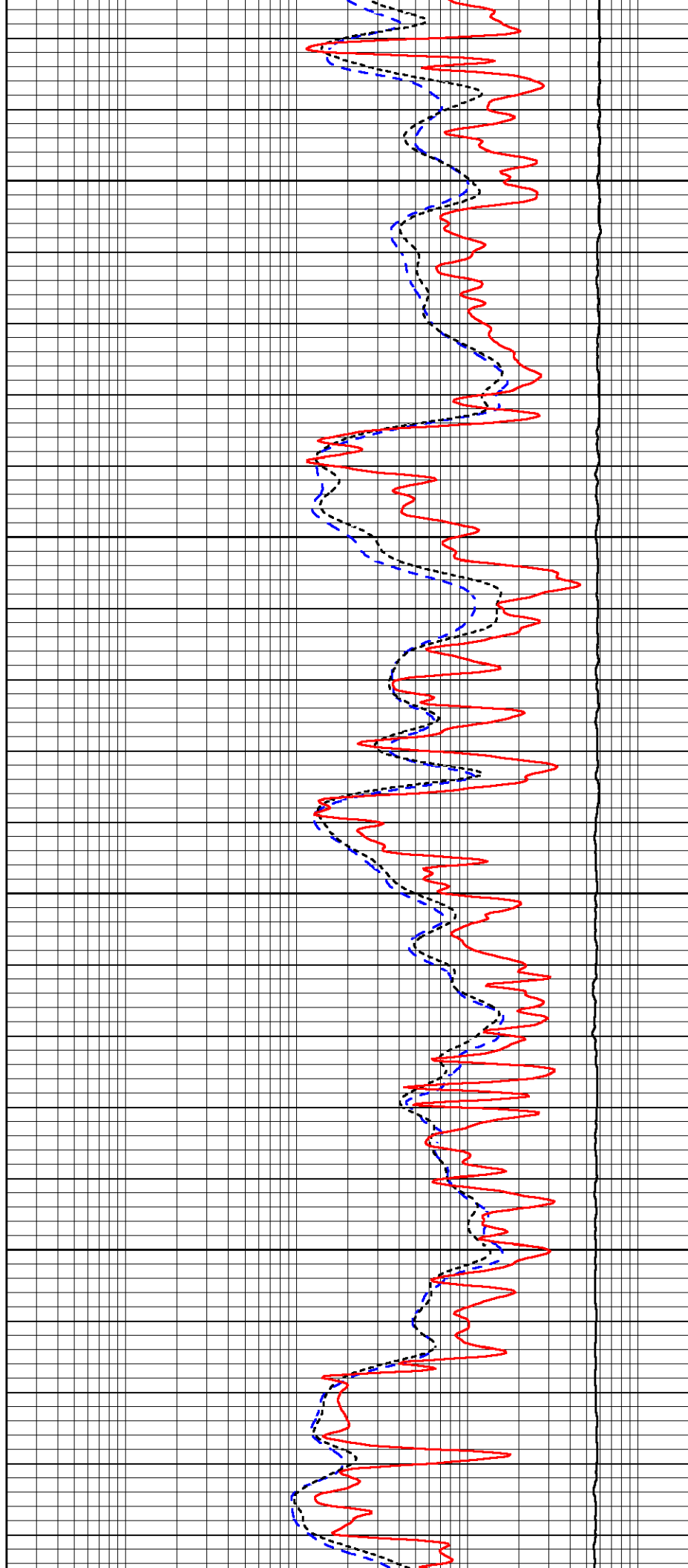


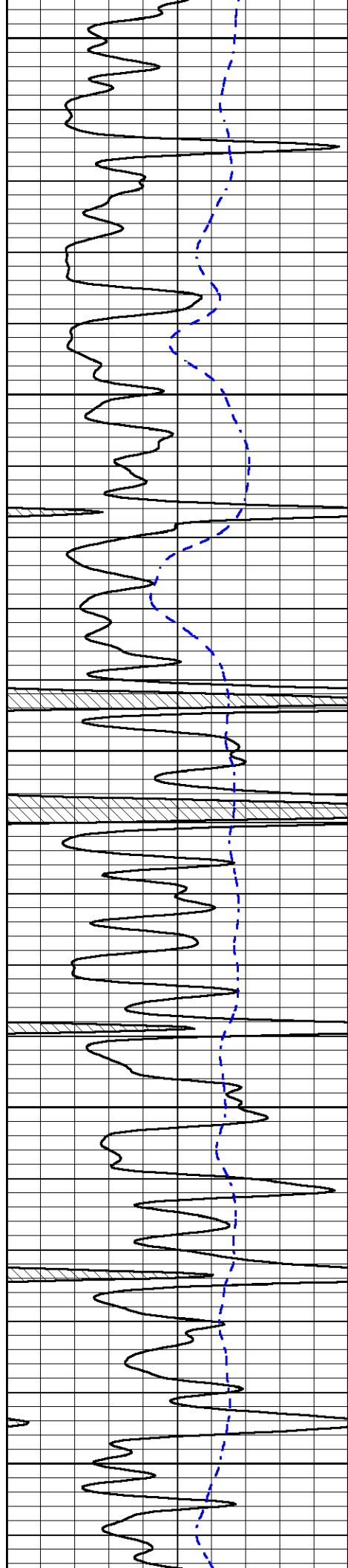
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4150

4200

4250





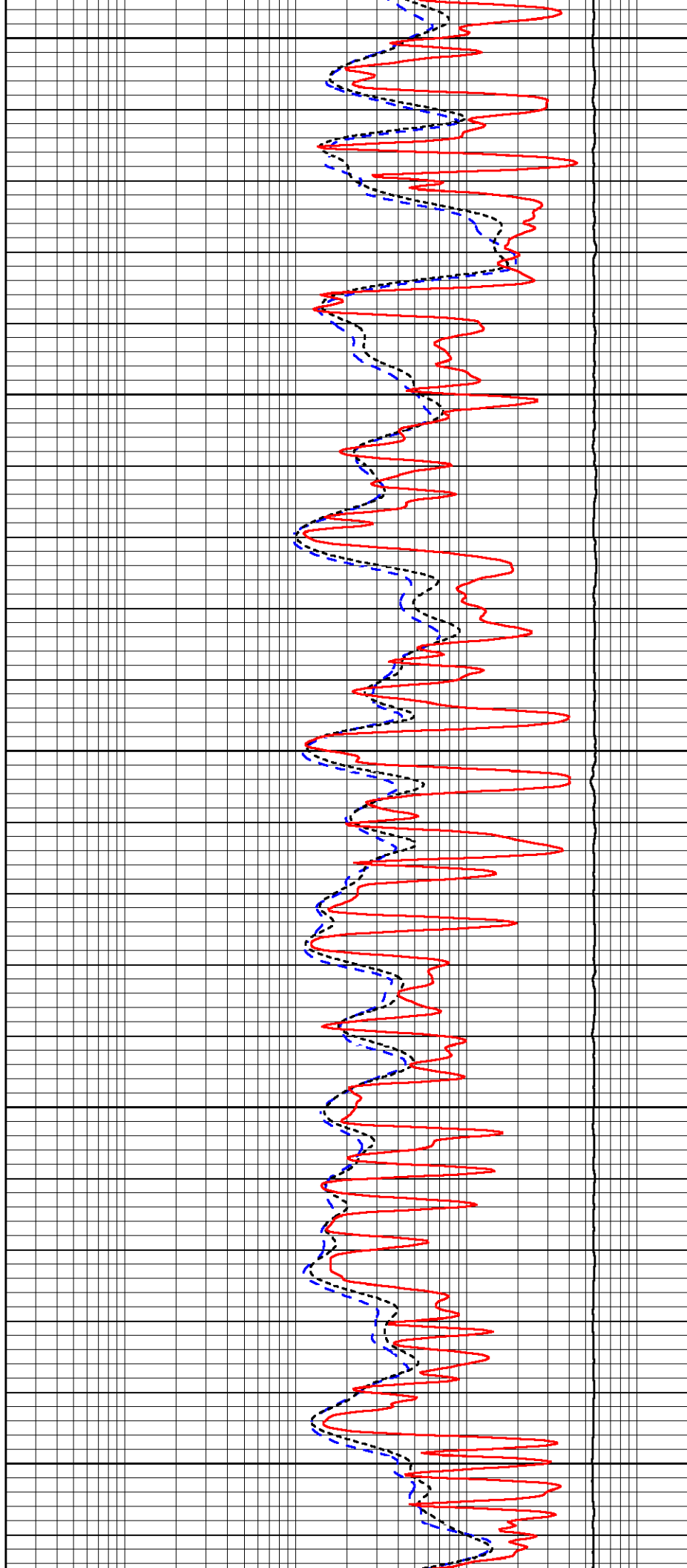
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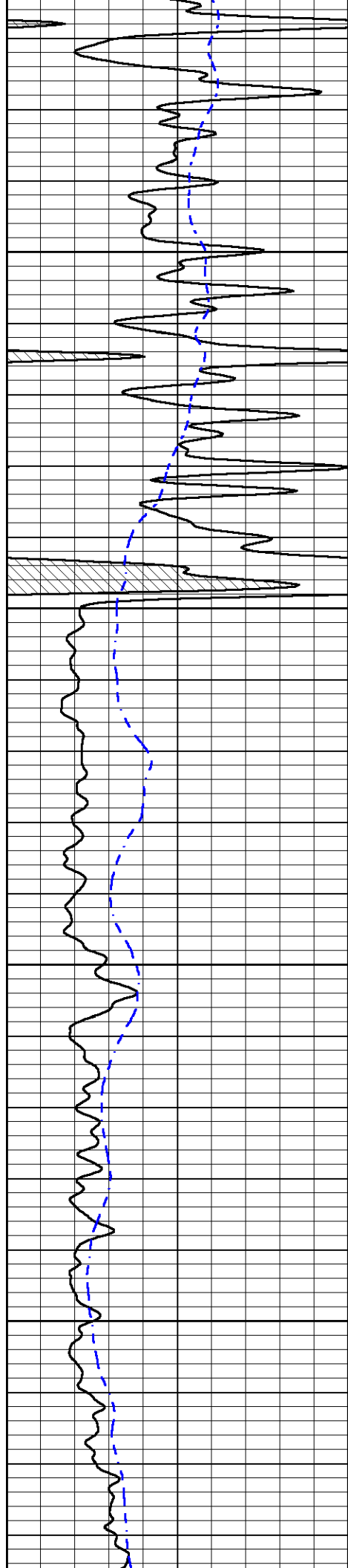
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4400

4450

4500



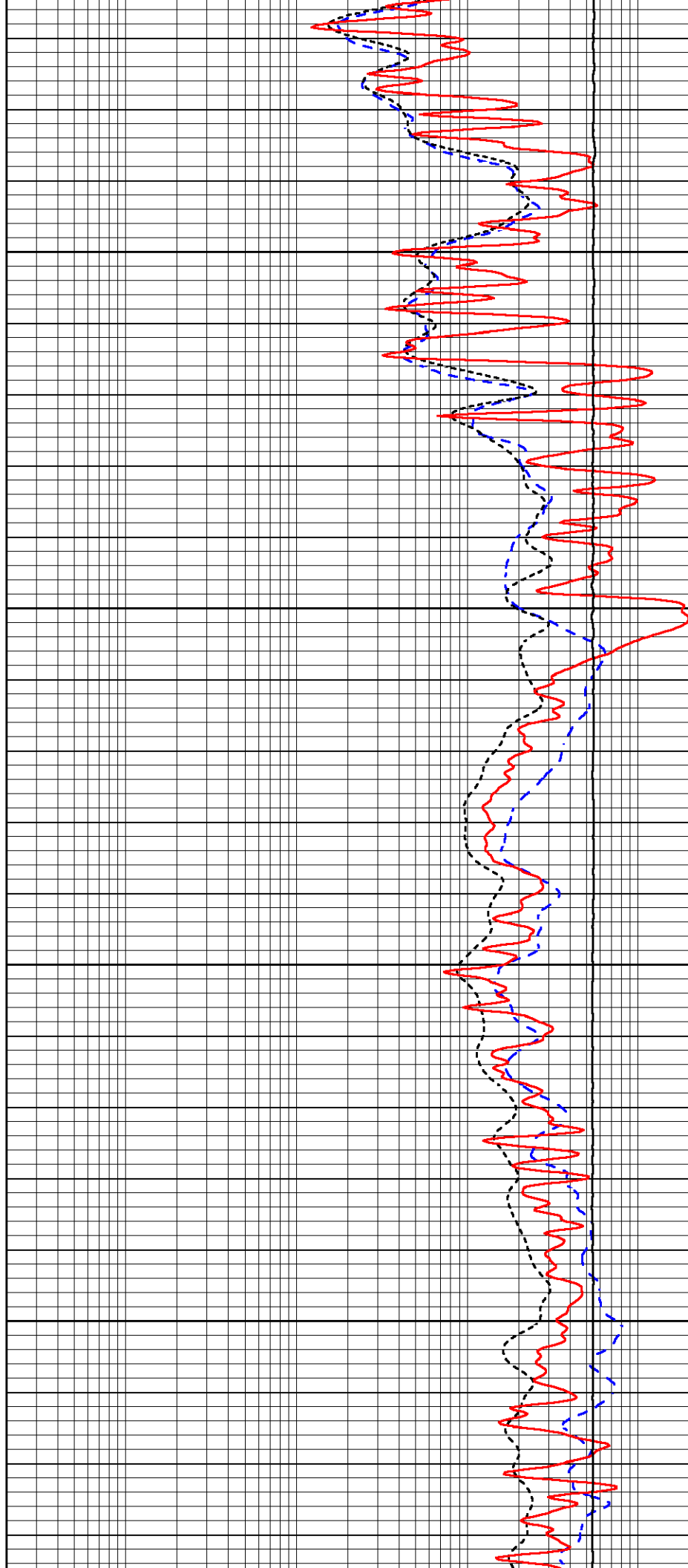


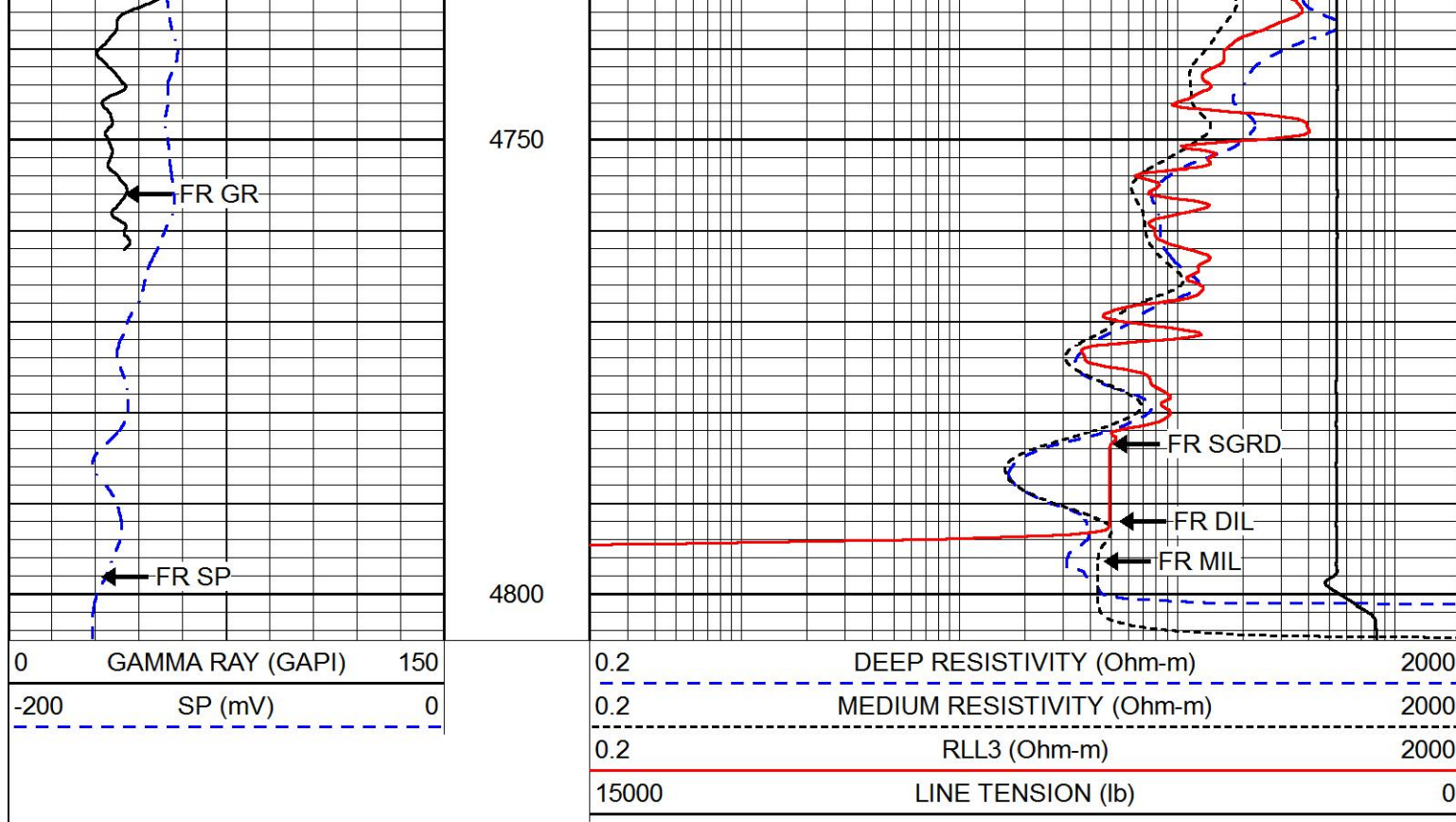
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4600

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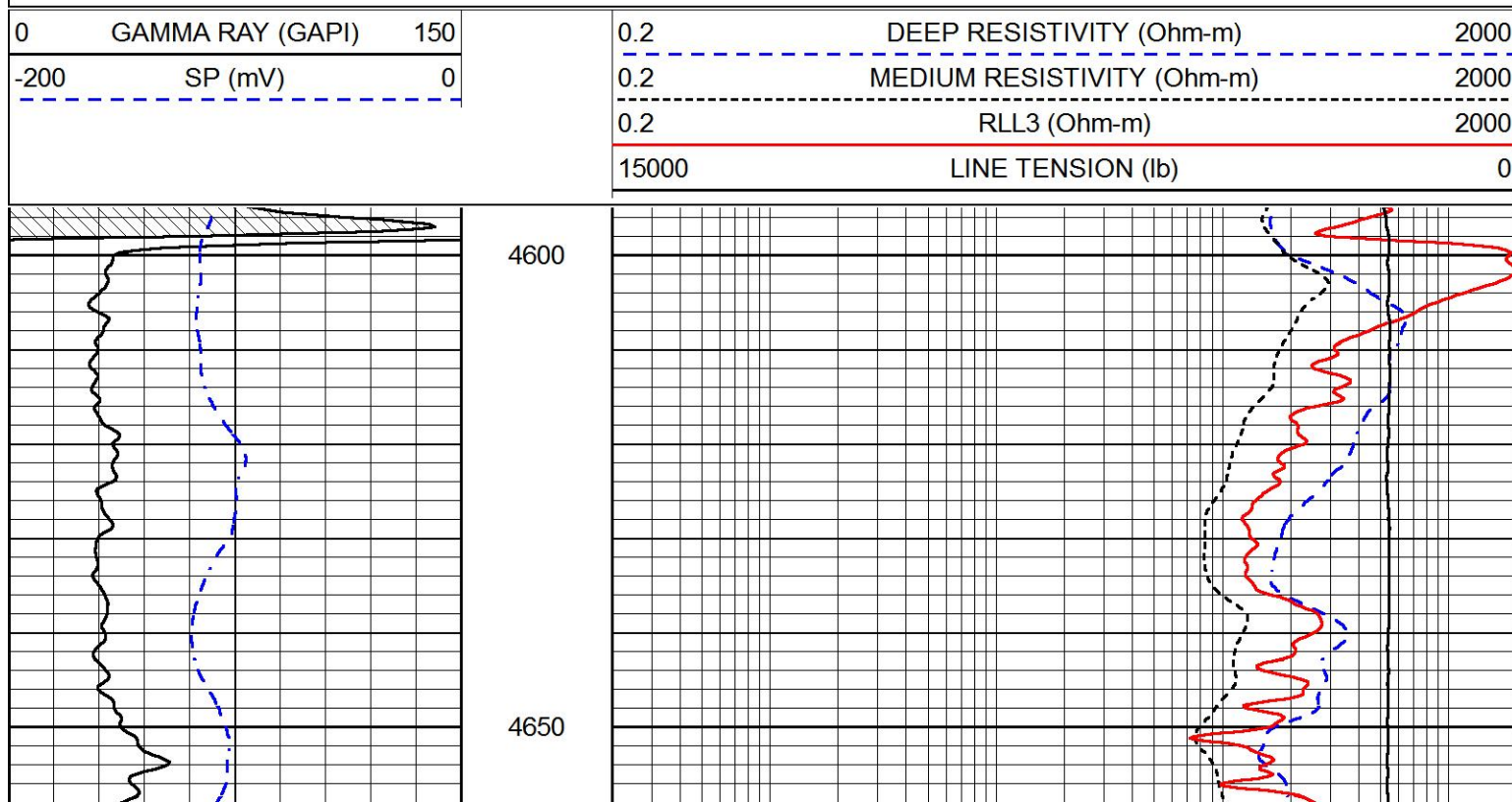
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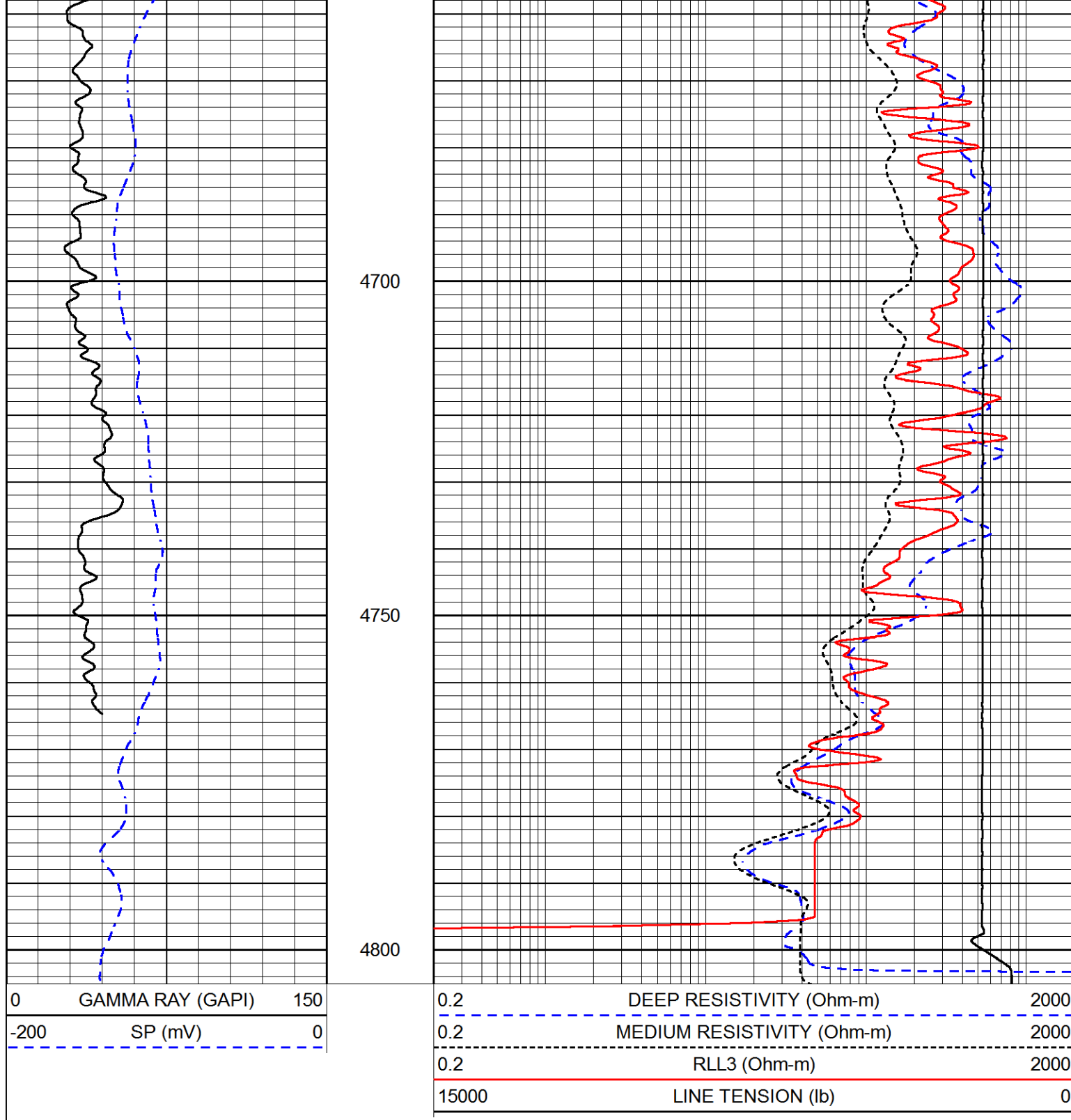




REPEAT SECTION

Database File daystar_graves_3.db
 Dataset Pathname stackml/pass2.1
 Presentation Format dil
 Dataset Creation Thu Aug 08 10:02:31 2019
 Charted by Depth in Feet scaled 1:240





Calibration Report

Database File daystar_graves_3.db
Dataset Pathname stackml/pass3.1
Dataset Creation Thu Aug 08 11:11:03 2019

Dual Induction Calibration Report

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

Readings

Loop: Air Loop

References

Air Loop

Results

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	0.360	-17.000

Microlog Calibration Report							
Serial-Model: Performed:				UDM-01-PSI UDM ML Fri May 31 06:10:42 2019			

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	20000.0000	0.0000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	20000.0000	0.0000
Caliper	1.3170	1.1585	8.0000	22.0000	in	-88.3214	124.3180

Compensated Density Calibration Report							
Serial-Model: Source / Verifier: Master Calibration Performed:				979-229-M&W 21170B / Tue Jul 23 10:17:03 2019			

Master Calibration							
	Density			Far Detector		Near Detector	
Magnesium	1.755	g/cc		7680.82	9959.08	cps	
Aluminum	2.690	g/cc		1424.07	6427.19	cps	
Spine Angle = 75.43				Density/Spine Ratio = 0.537			
	Size			Reading			
Small Ring	4.00	in		1.15			
Large Ring	16.00	in		1.03			

Compensated Neutron Calibration Report							
Serial Number: Tool Model: Calibration Performed:				tk10-MW M&W 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: Tool Model: Calibration Performed:		89-M&W M&W 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	DAYSTAR PETROLEUM, INC.
Well	GRAVES #3
Field	DAMME
County	FINNEY
State	KANSAS