



**PIONEER**  
Pioneer Energy Services

**DUAL INDUCTION  
LOG**

Company PERKINS OIL ENTERPRISES, INC.  
Well KYSER-HYDE #26  
Field BUSH-DENTON  
County ELK  
State KANSAS

Company PERKINS OIL ENTERPRISES, INC.  
Well KYSER-HYDE #26  
Field BUSH-DENTON  
County ELK State KANSAS

Location: API #: 15-049-22618-00-00  
990' FSL & 1650' FEL  
SEC 9 TWP 30S RGE 9E  
Permanent Datum GROUND LEVEL Elevation 1447'  
Log Measured From KELLY BUSHING  
Drilling Measured From KELLY BUSHING  
Other Services  
CNL/CDL  
MEL  
Elevation  
K.B. 1456'  
D.F. N/A  
G.L. 1447'

Date	12/14/2018
Run Number	ONE
Depth Driller	2875'
Depth Logger	2875'
Bottom Logged Interval	2874'
Top Log Interval	450'
Casing Driller	8.625" @ 475'
Casing Logger	475'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	900
Density / Viscosity	9.3 36
pH / Fluid Loss	10.0 11.8
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.80 @ 56
Rmt @ Meas. Temp	.60 @ 56
Rmc @ Meas. Temp	1.08 @ 56
Source of Rmf / Rmc	CHARTS
Rm @ BHT	.43 @ 105
Operating Rig Time	2 HOURS
Max Rec. Temp. F	105 DEGF
Equipment Number	108
Location	HAYS
Recorded By	J. HENRICKSON
Witnessed By	MIKE PRESSNALL

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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.

HOWARD KANSAS  
WEST ON LIMESTONE TO RD 9, 1 SOUTH, 2 WEST TO CATTLE GUARD,  
WEST TO WIND FARM, SOUTH TO WELL AFTER CATTLE GUARD

Log Measured From: KELLY BUSHING 9 Ft. Above Permanent Datum

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

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

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\perkins\_kyser\_hyde\_26.db  
 Dataset field/well/stackml/pass3.1/\_vars\_

## Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	100	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	60	0	Off	2875

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 CNSSC	37.48 36.73		CNT-M&W (tk10-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (144-84)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSI STKBL ML (PSI-01) Stackable Microlog Tools	7.58	4.00	65.00
RLL3 RLL3F	15.80 15.79		DIL-M&W (PSI 988)	18.50	3.50	220.00
CILD	8.00					

CILM 4.70

SP 0.20

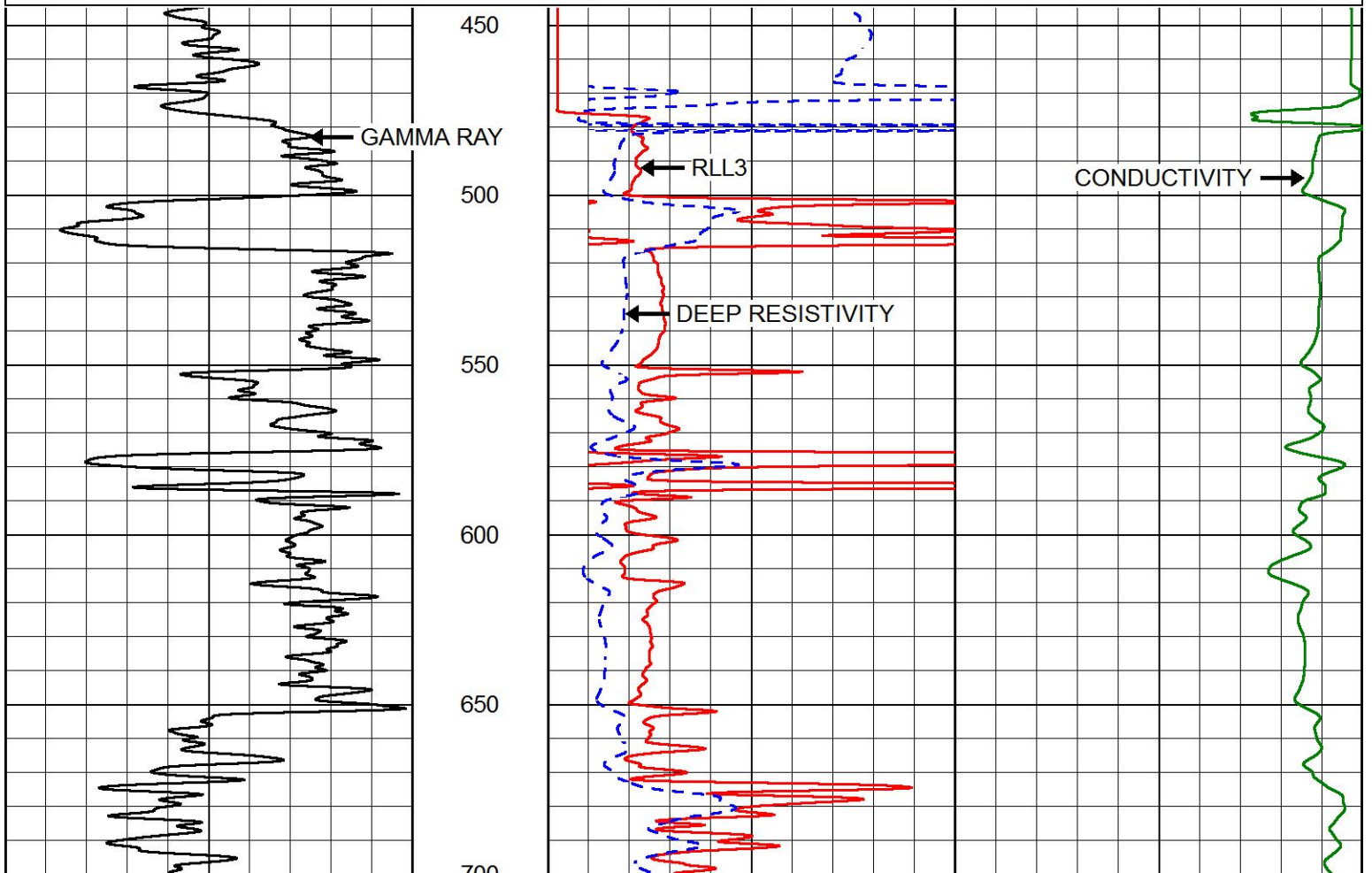
Dataset: perkins\_kyser\_hyde\_26.db: field/well/stackml/pass3.1  
 Total length: 43.08 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in

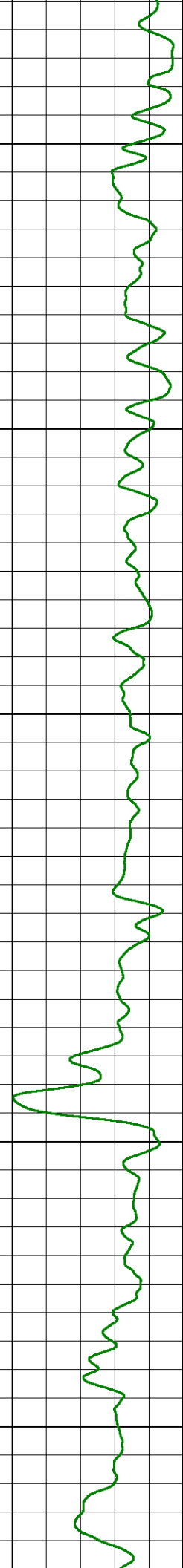
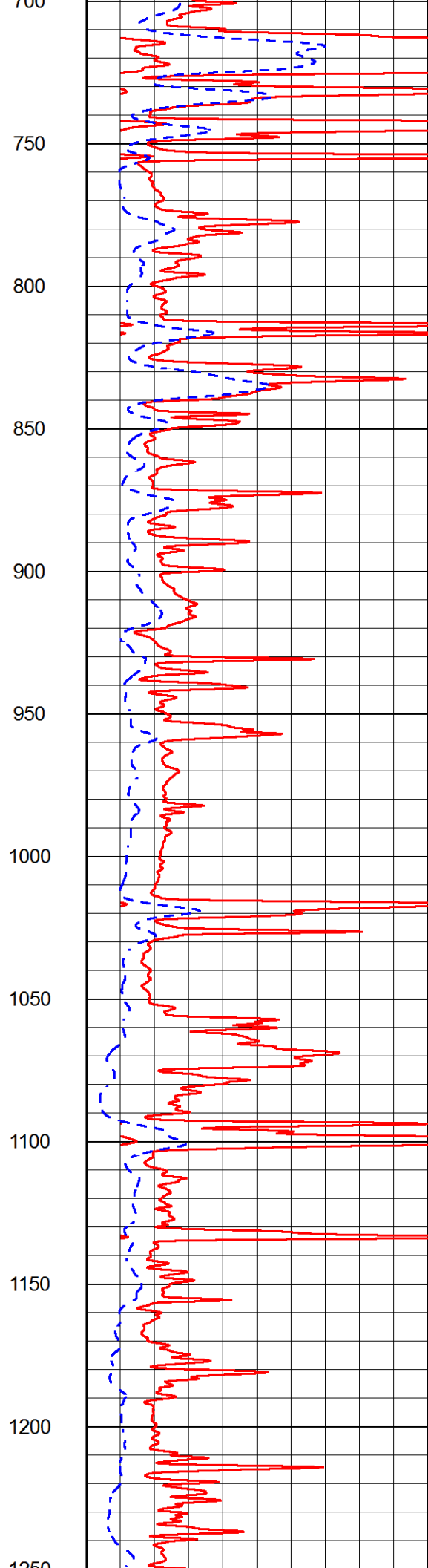
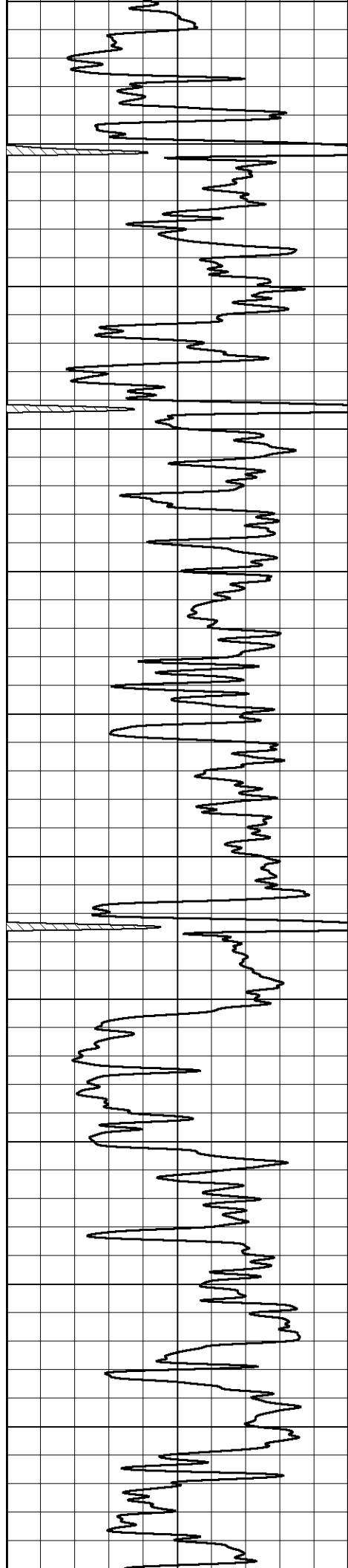


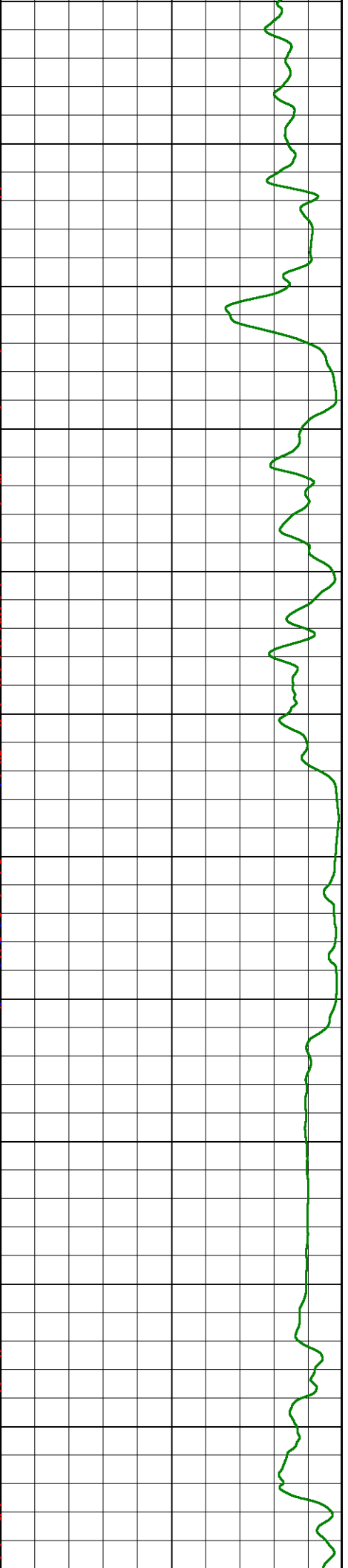
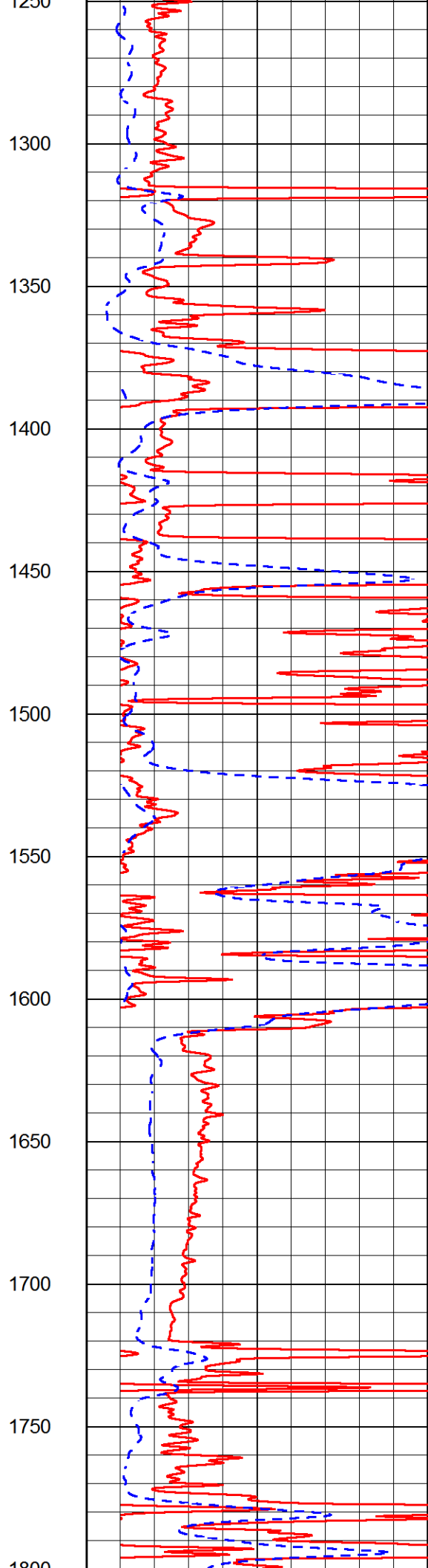
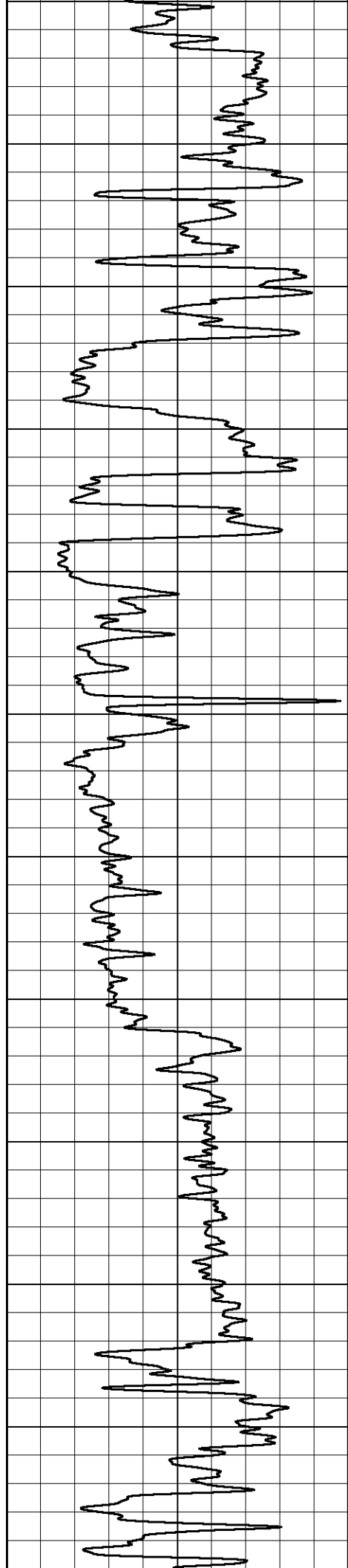
# MAIN PASS

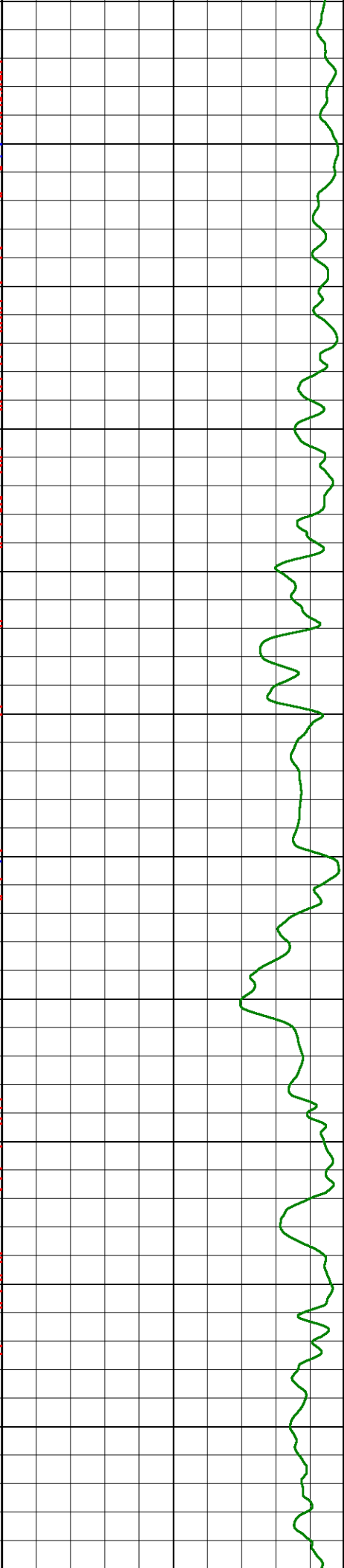
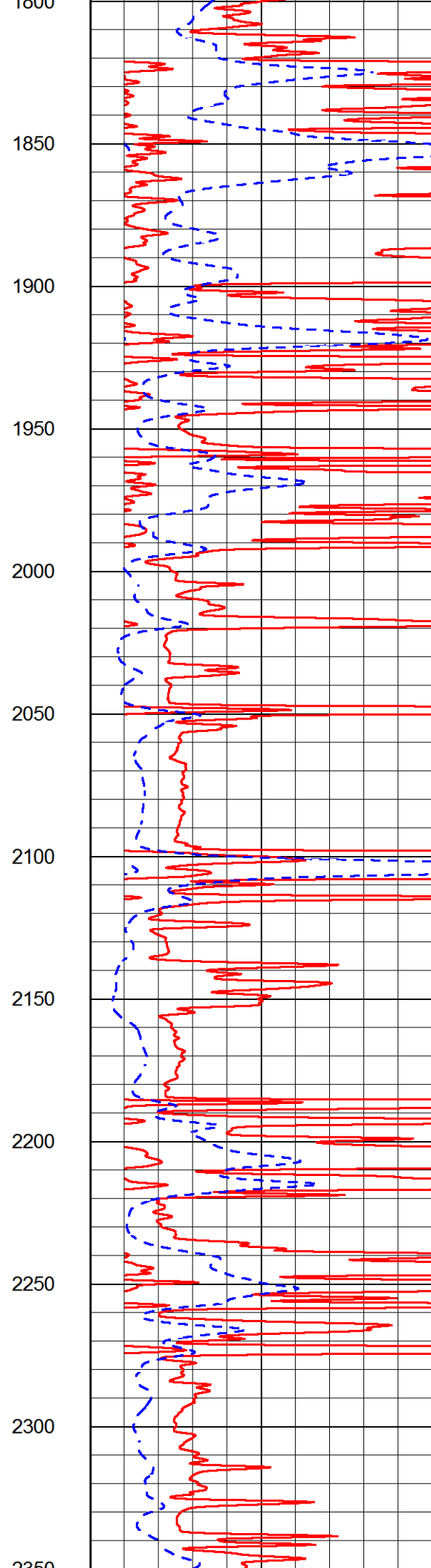
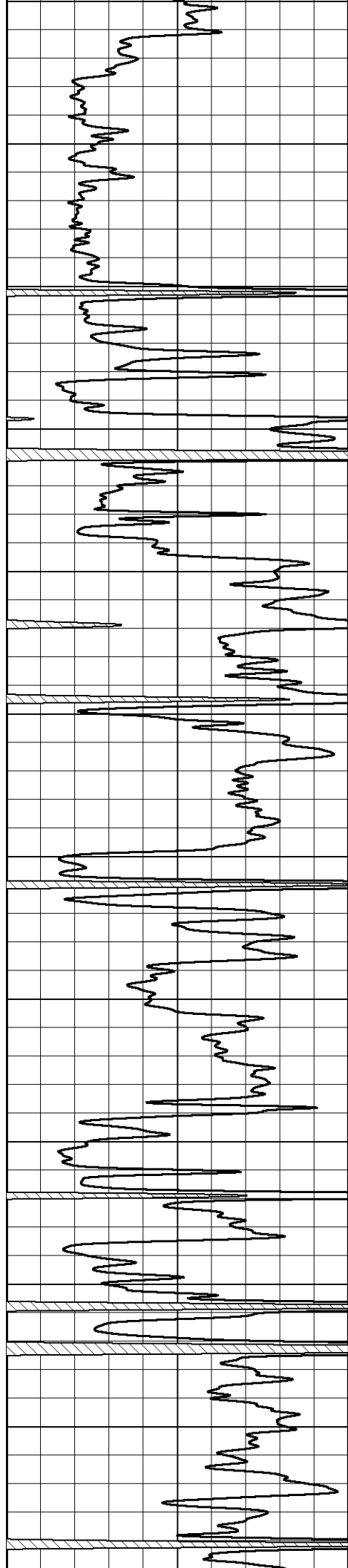
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 Presentation Format dil2in  
 Dataset Creation Fri Dec 14 23:00:49 2018  
 Charted by Depth in Feet scaled 1:600

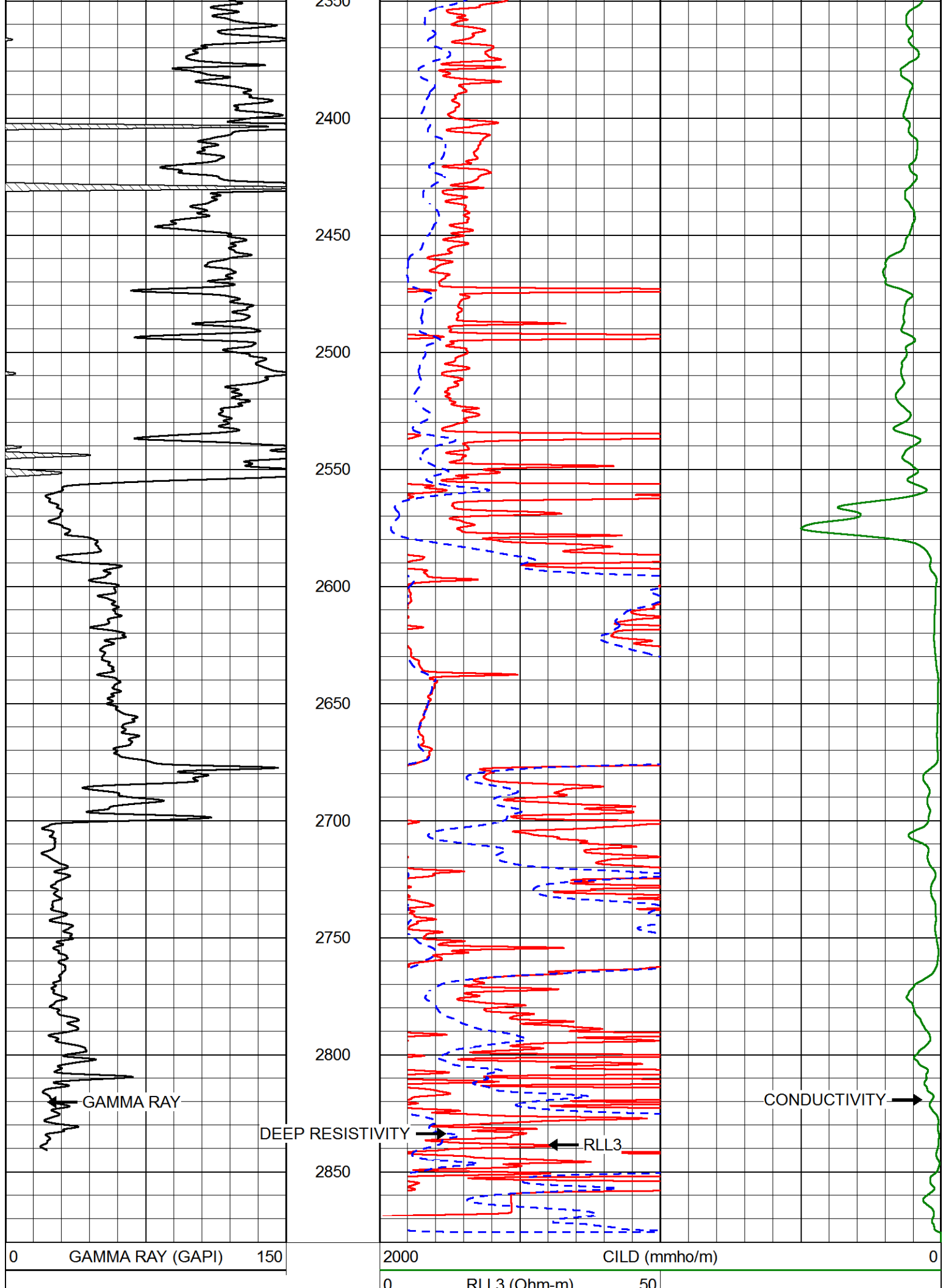
0	GAMMA RAY (GAPI)	150	2000	CILD (mmho/m)	0
			0	RLL3 (Ohm-m)	50
			0	DEEP RESISTIVITY (Ohm-m)	50
			50	RLL3 (Ohm-m)	500
			50	RILD (Ohm-m)	500











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

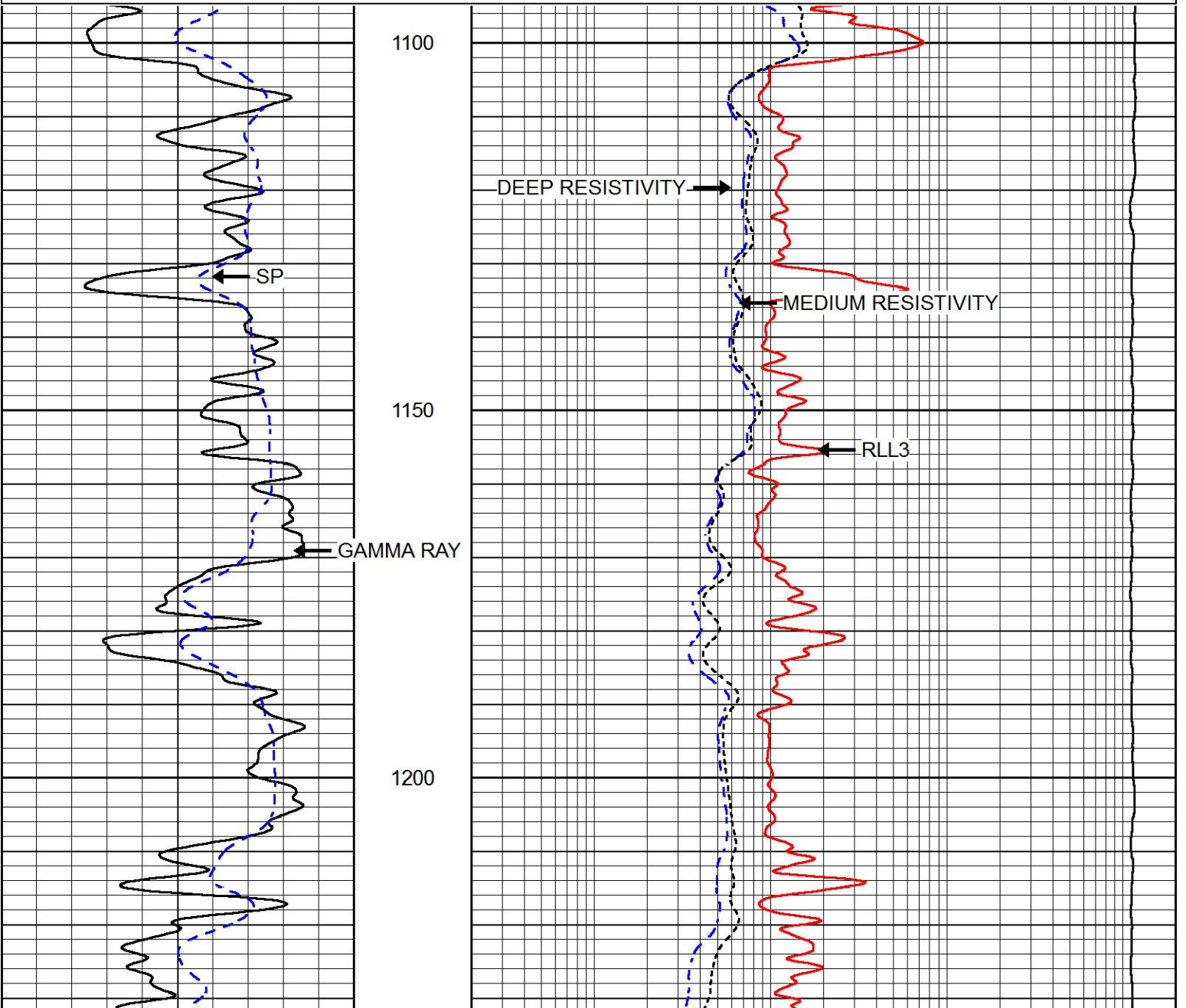


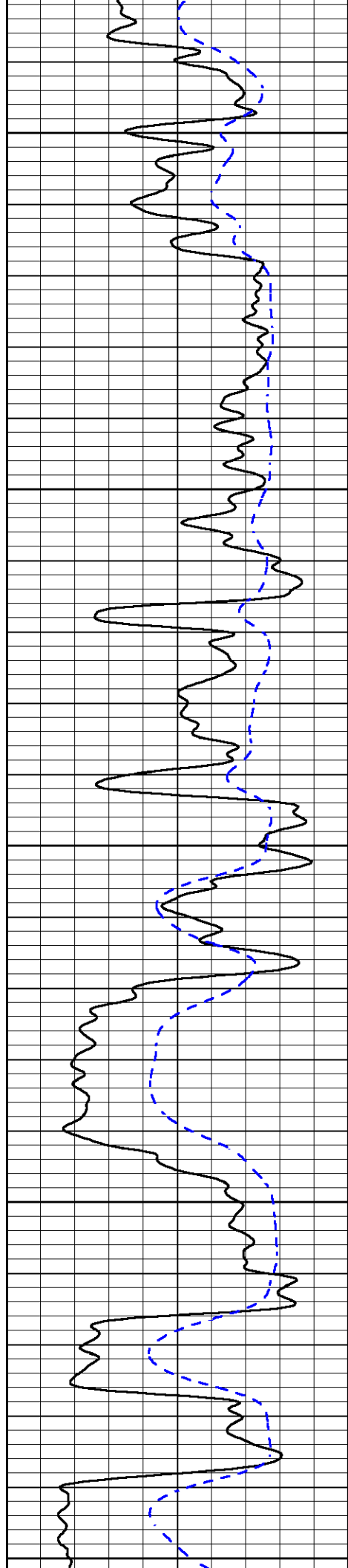
# MAIN PASS

Database File perkins\_kyser\_hyde\_26.db  
 Dataset Pathname stackml/pass3.1  
 Presentation Format dil  
 Dataset Creation Fri Dec 14 23:00:49 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





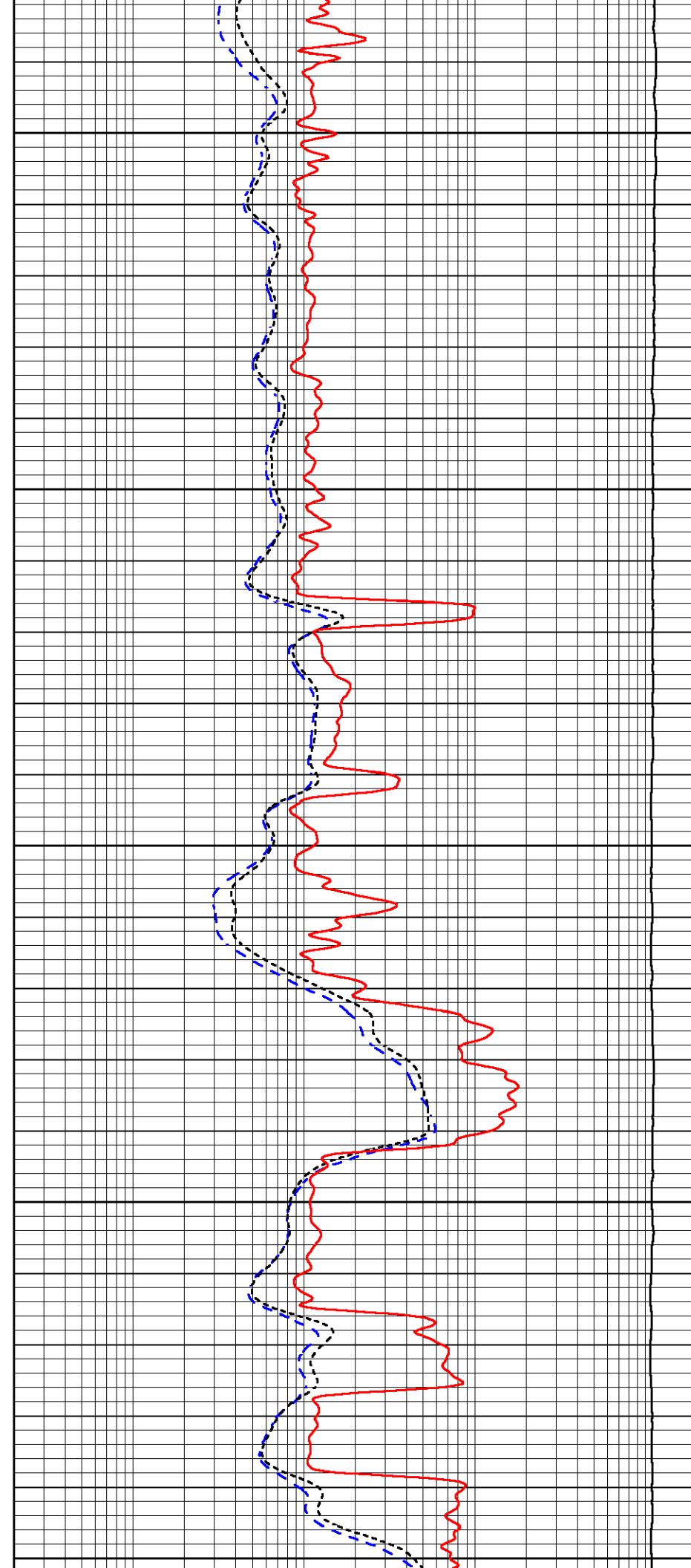
1250

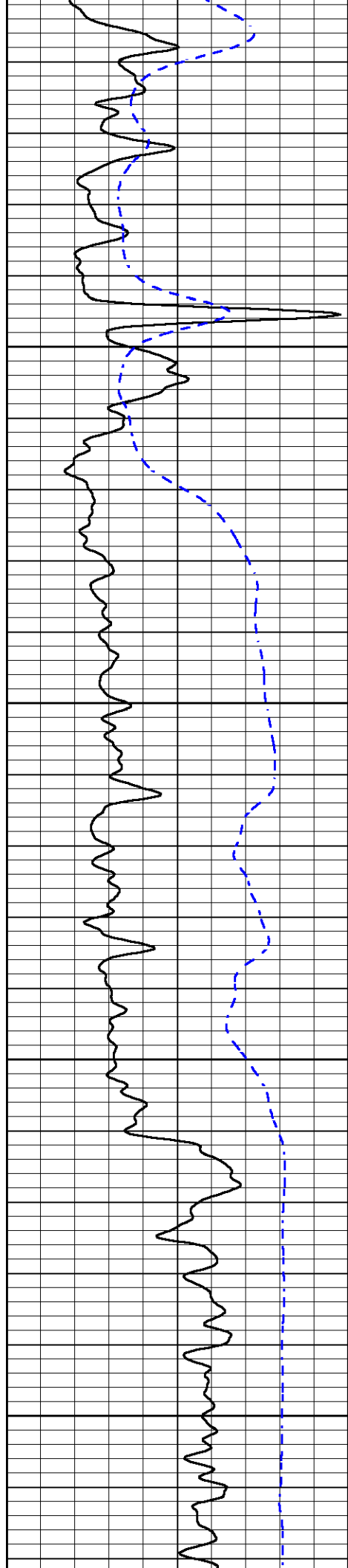
1300

1350

1400

1450



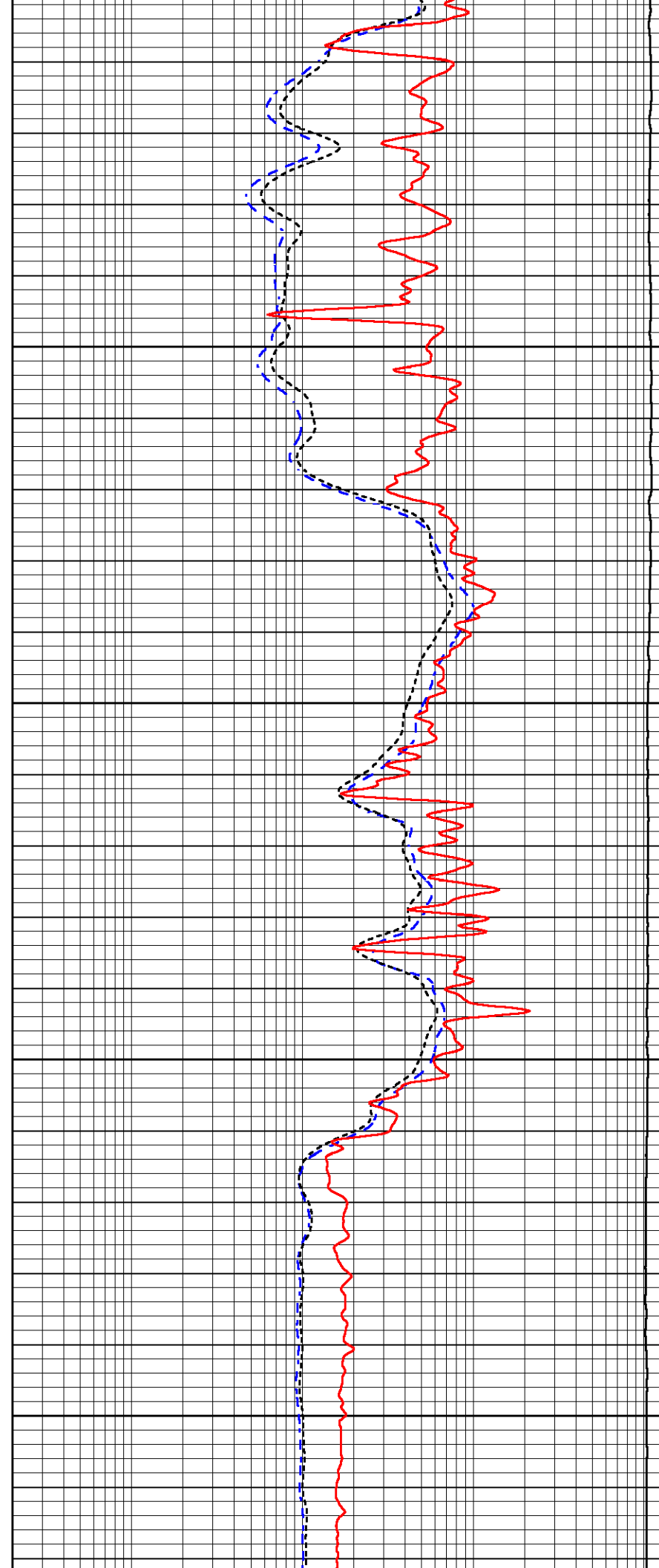


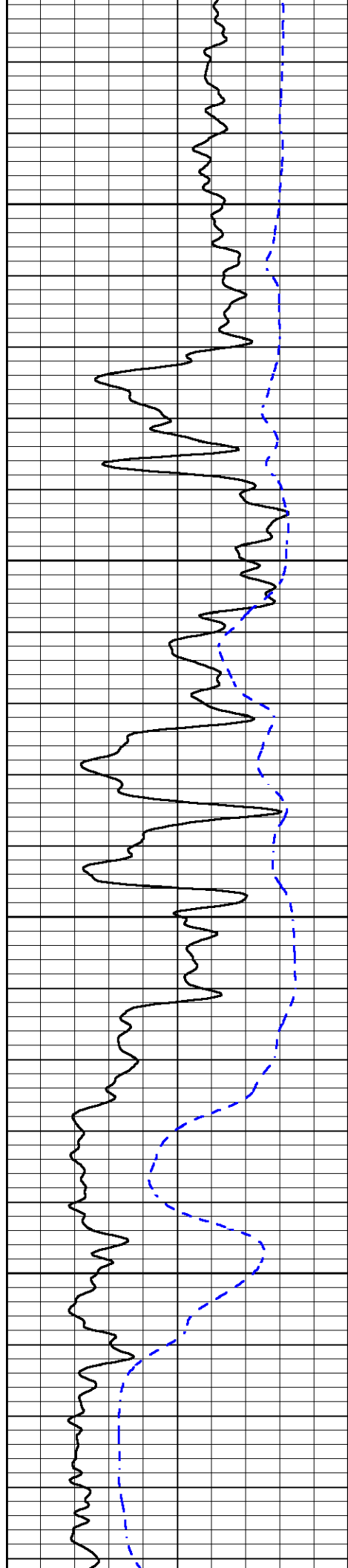
1500

1550

1600

1650



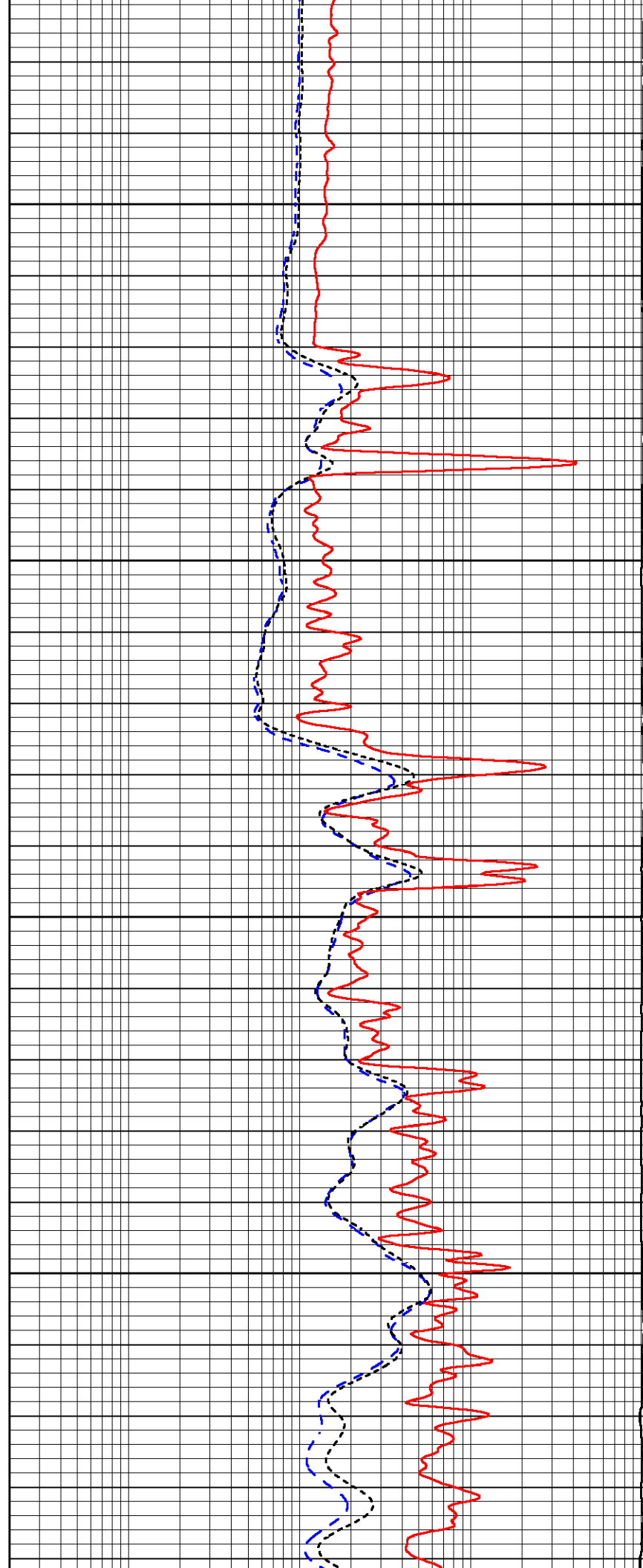


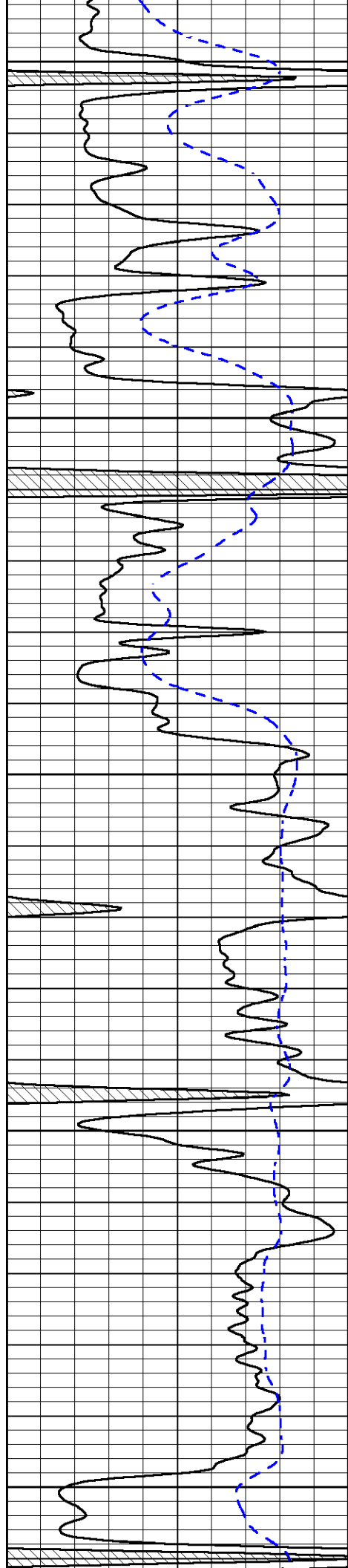
1700

1750

1800

1850





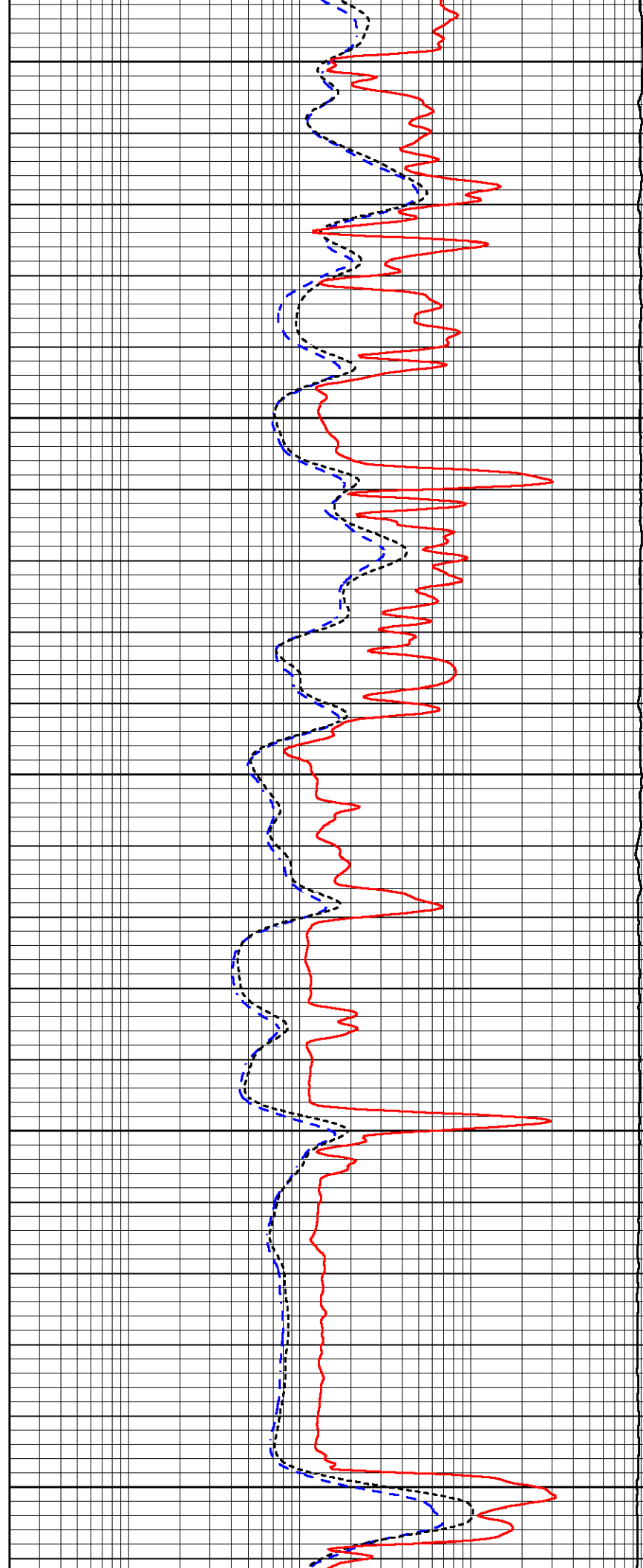
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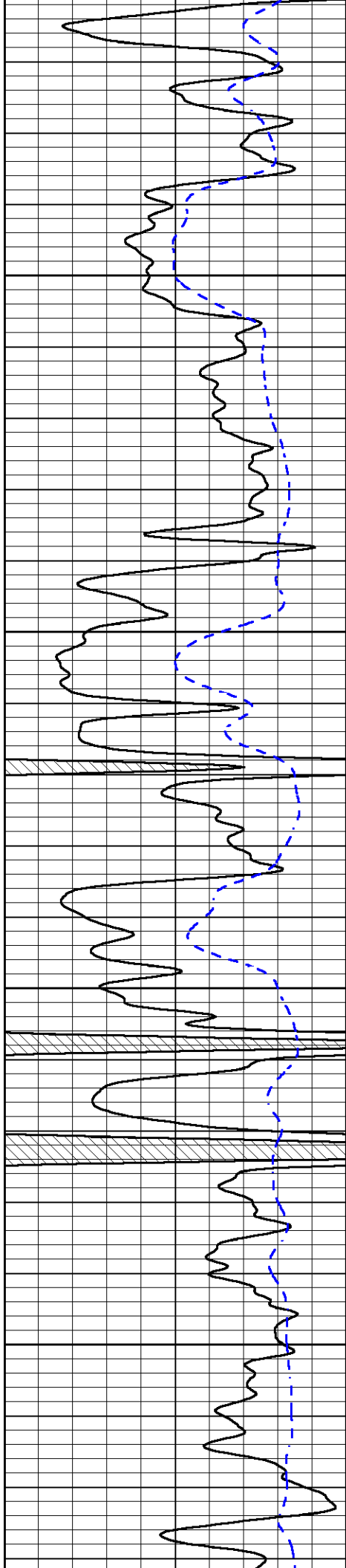
1950

2000

2050

2100



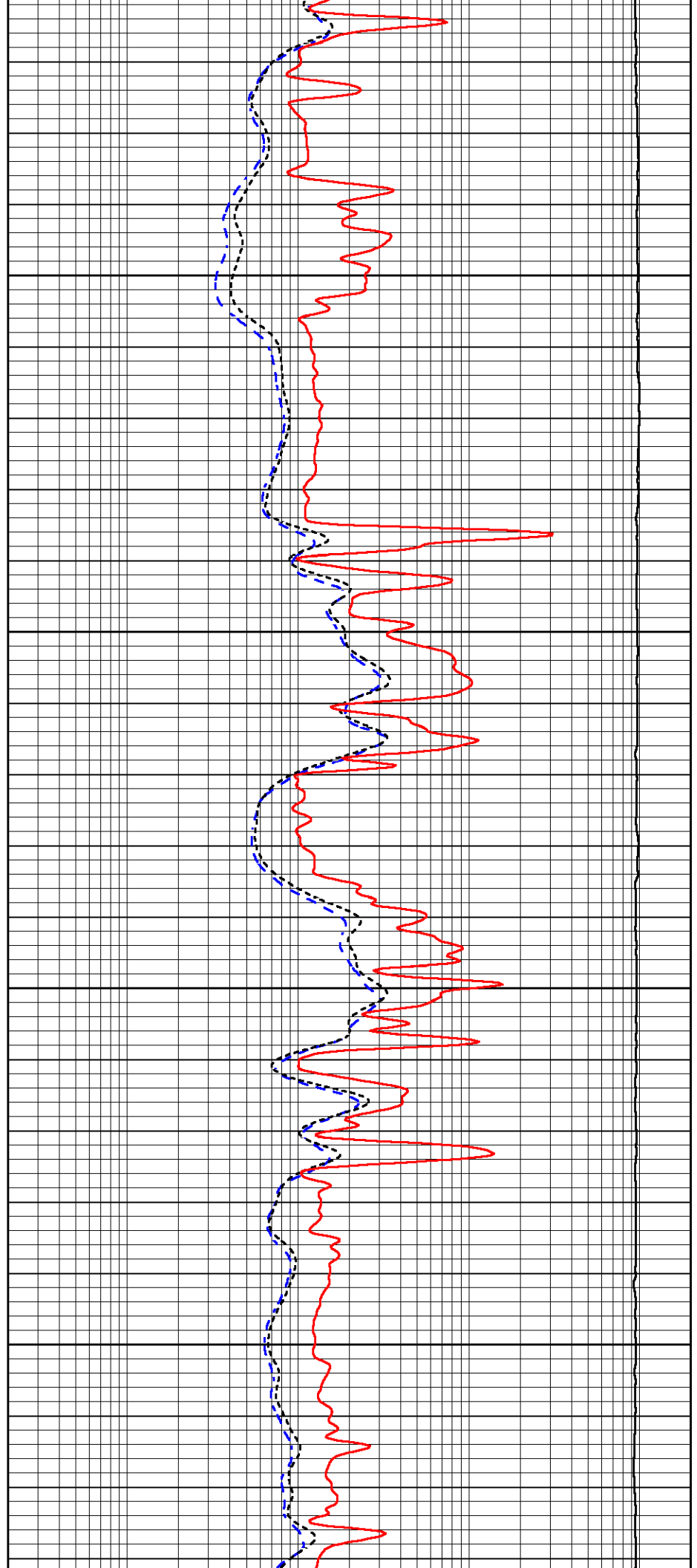


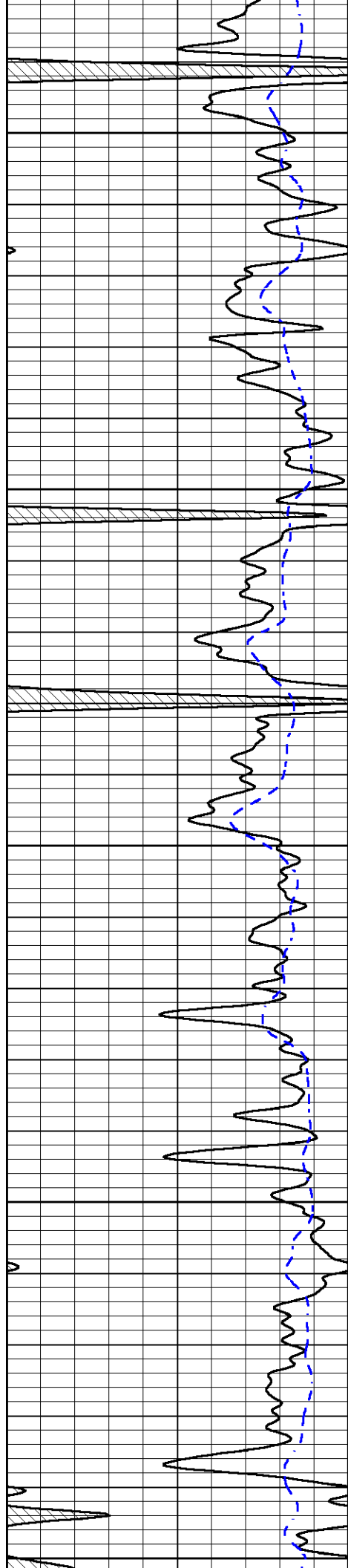
2150

2200

2250

2300





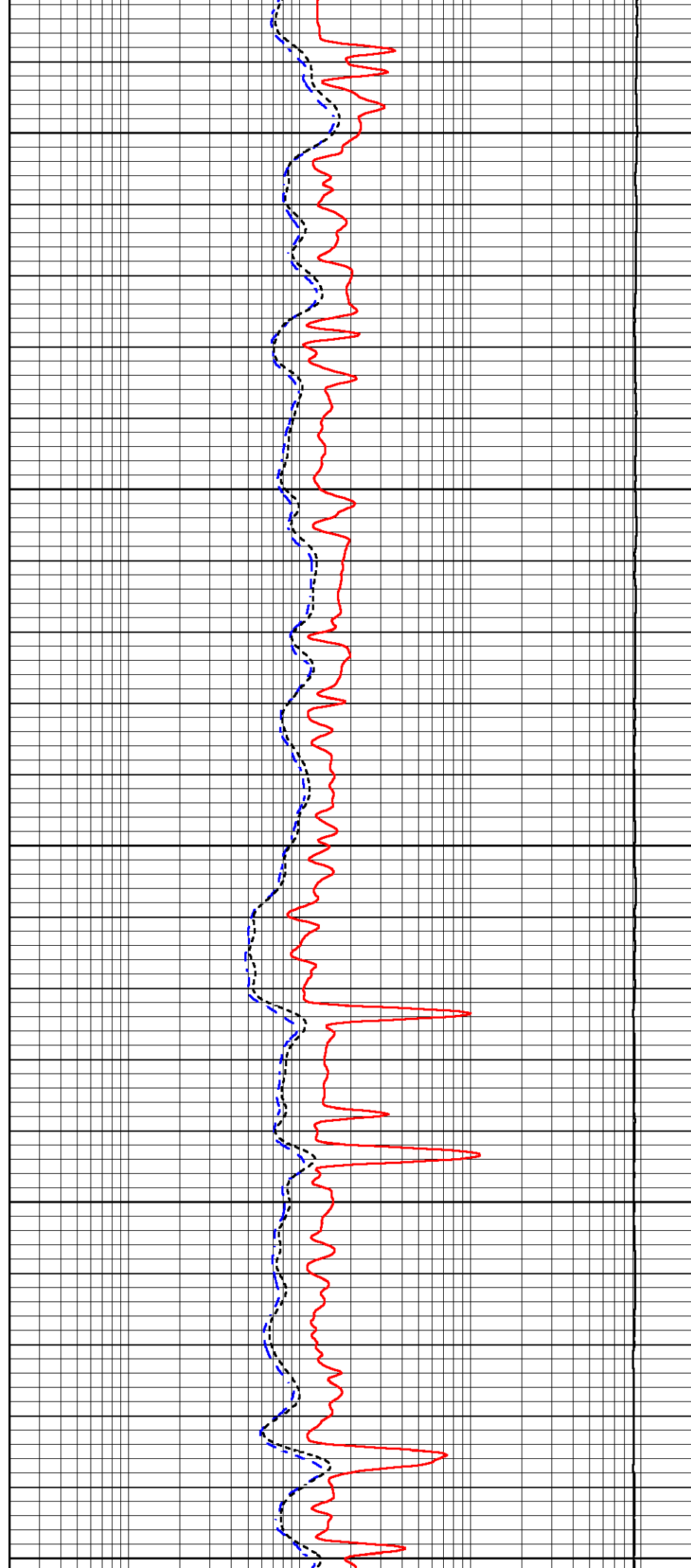
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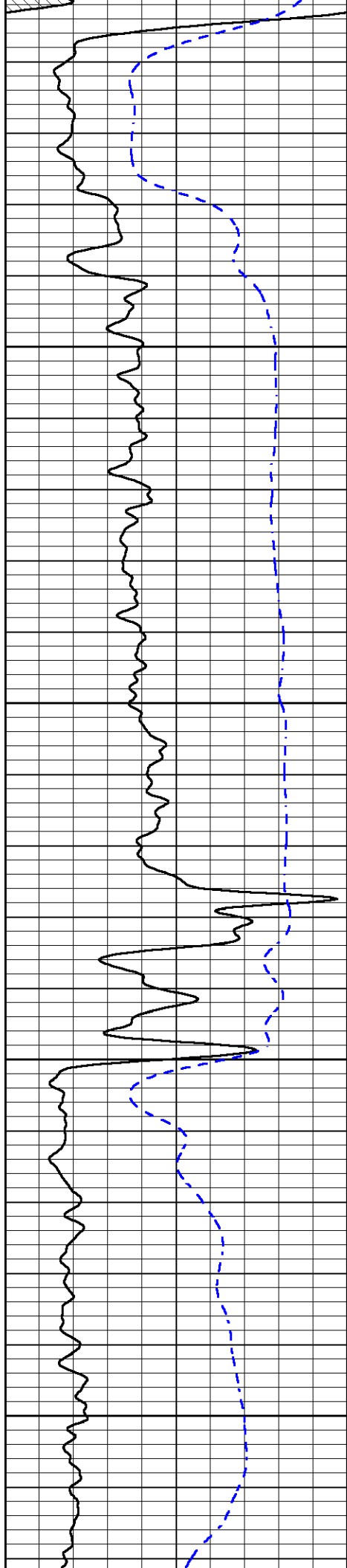
2400

2450

2500

2550



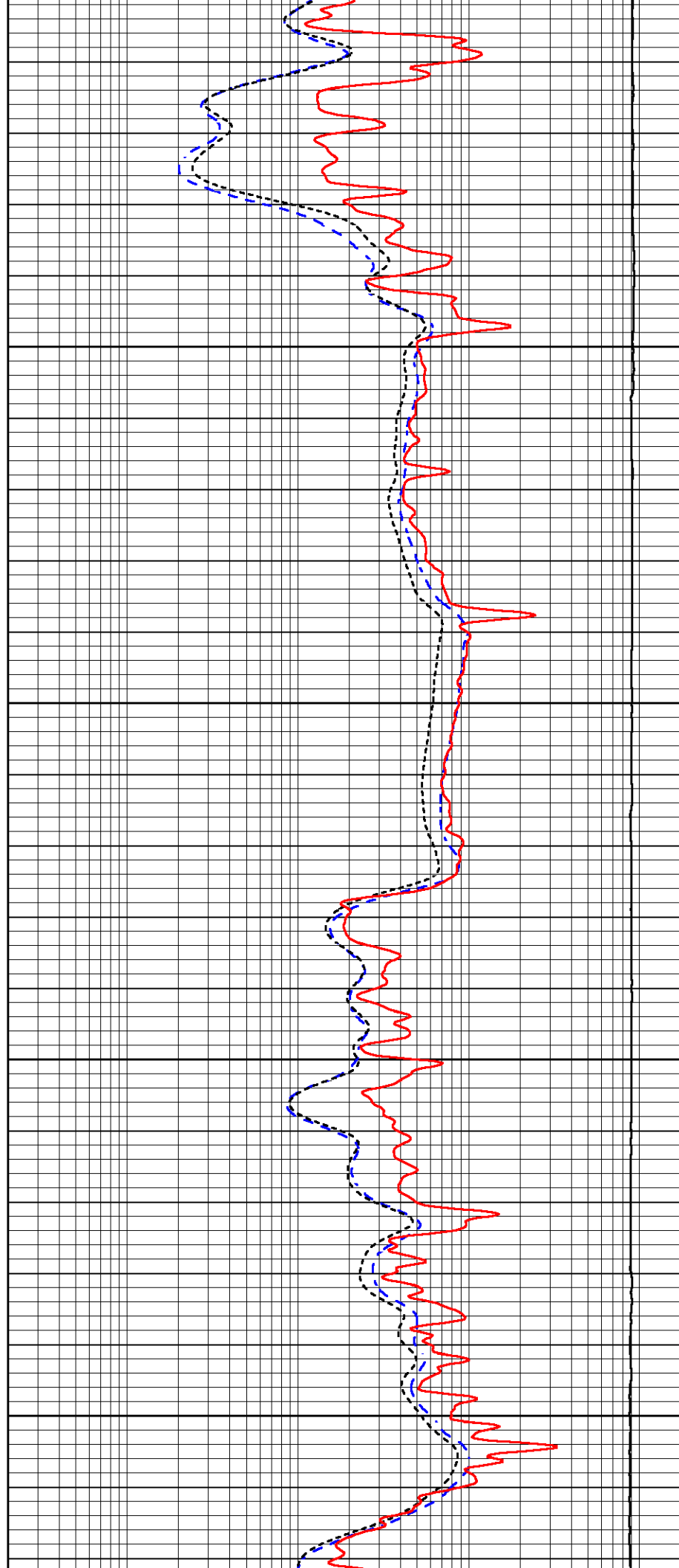


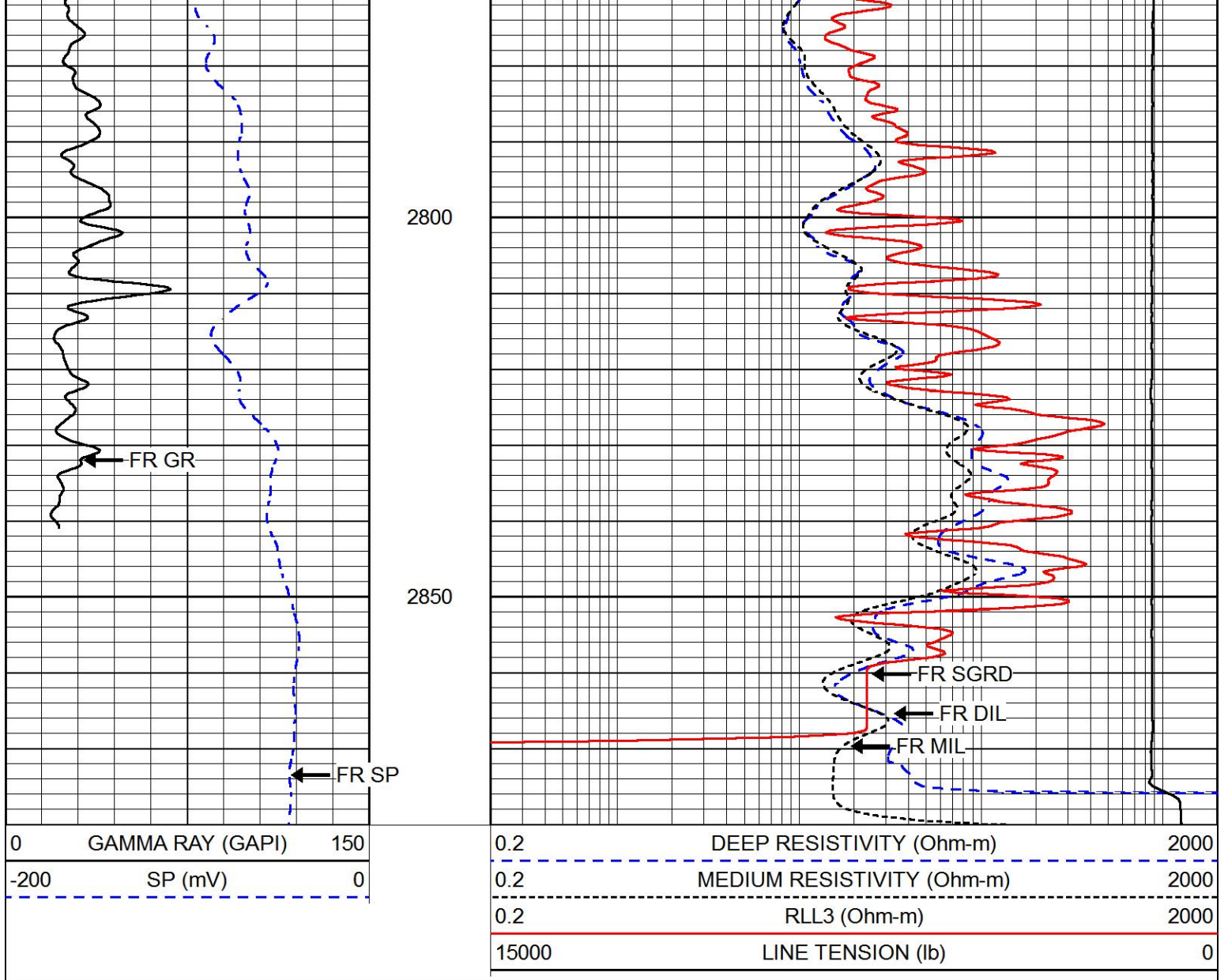
2600

2650

2700

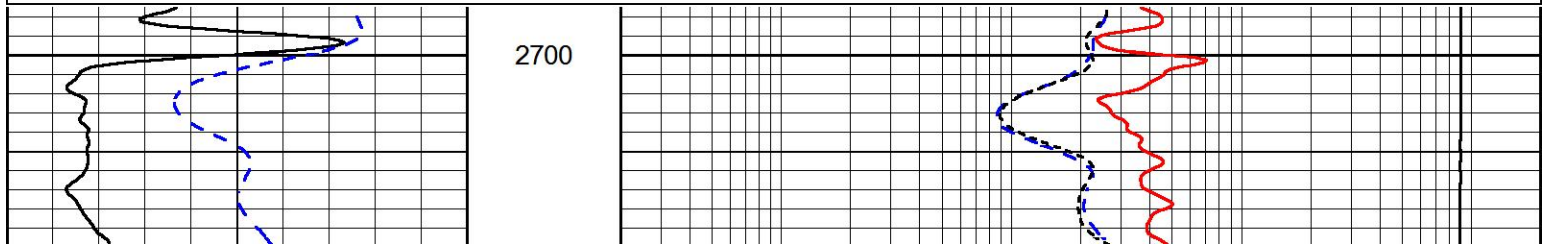
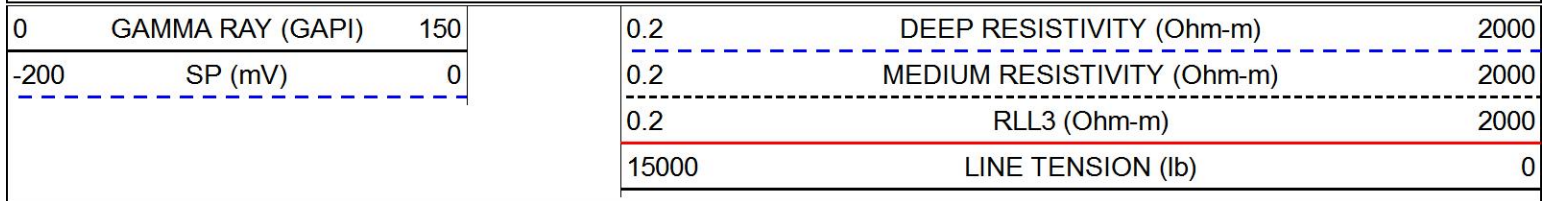
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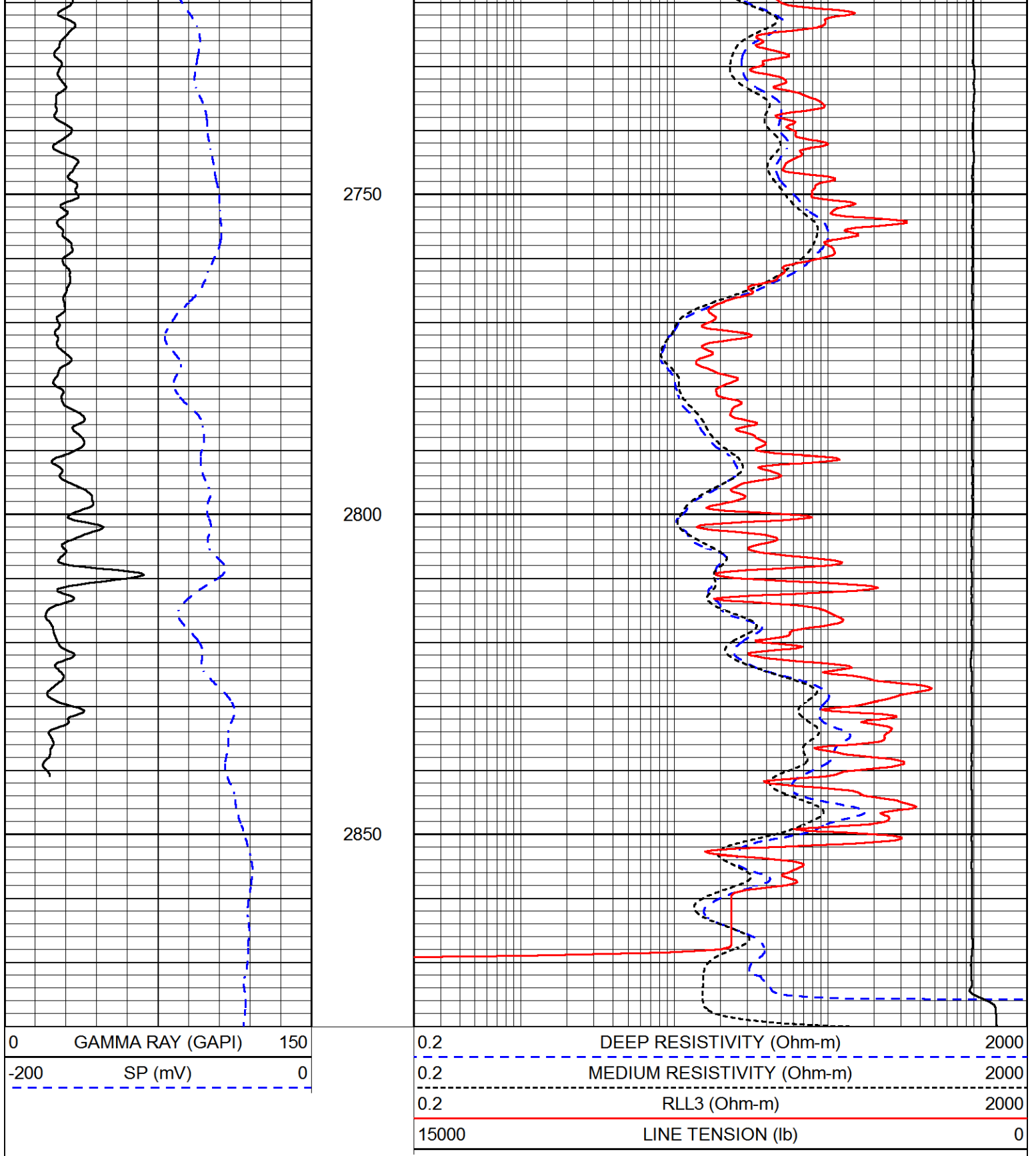





# REPEAT SECTION

Database File perkins\_kyser\_hyde\_26.db  
 Dataset Pathname stackml/pass2.1  
 Presentation Format dil  
 Dataset Creation Fri Dec 14 23:00:58 2018  
 Charted by Depth in Feet scaled 1:240





Calibration Report

Database File     perkins\_kyser\_hyde\_26.db  
 Dataset Pathname     stackml/pass3.1  
 Dataset Creation     Fri Dec 14 23:00:49 2018

Dual Induction Calibration Report

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

Loop:	Readings		References			Results	
	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	22500.0000	-1.0000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	29500.0000	-1.0000
Caliper	1.0001	1.1397	6.5000	18.5000	in	86.0000	-82.4800

**Compensated Density Calibration Report**

Serial-Model: 144-84-M&W  
 Source / Verifier: /  
 Master Calibration Performed: Wed Nov 14 16:22:24 2018

**Master Calibration**

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4298.32	5307.27	cps
Aluminum	2.675	g/cc	809.74	3408.43	cps
Spine Angle = 75.14			Density/Spine Ratio = 0.533		
	Size		Reading		
Small Ring	4.00	in	0.70		
Large Ring	14.00	in	0.04		

**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	PERKINS OIL ENTERPRISES, INC.
Well	KYSER-HYDE #26
Field	BUSH-DENTON
County	ELK
State	KANSAS