



MIDWEST WIRELINE

# DUAL INDUCTION LOG

Company TDI, Inc.  
 Well Munsch #13  
 Field Schoenchen  
 County Ellis State Kansas

Company TDI, Inc.  
 Well Munsch #13  
 Field Schoenchen  
 County Ellis  
 State Kansas

Location: 1087 FSL & 2032 FEL  
 SEC 9 TWP 15S RGE 18W  
 Permanent Datum Ground Level Elevation 2030  
 Log Measured From Kelly Bushing  
 Drilling Measured From Kelly Bushing  
 Other Services  
 CNL/CDL  
 MEL  
 Elevation  
 K.B. 2040  
 D.F.  
 G.L. 2030

Date	11/11/2021
Run Number	One
Depth Driller	3750
Depth Logger	3752
Bottom Logged Interval	3751
Top Log Interval	200
Casing Driller	8:25 @ 223
Casing Logger	219
Bit Size	7.875
Type Fluid in Hole	Chemical
Salinity, ppm CL	5600
Density / Viscosity	9.2 58
pH / Fluid Loss	10.0 6.0
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.55 @ 73
Rmt @ Meas. Temp	.41 @ 73
Rmc @ Meas. Temp	.74 @ 73
Source of Rmf / Rmc	CHARTS
Rm @ BHT	.35 @ 114
Operating Rig Time	3 Hours
Max Rec. Temp. F	114
Equipment Number	P-108
Location	HAYS
Recorded By	J. Henrickson
Witnessed By	Tom Denning
	Herb Deines

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All interpretations are opinions based on inferences from electrical or other measurements and Midwest Wireline LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Midwest Wireline 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.

Hays Kansas  
 South to Norfolk Road, 3/8 West, North Into

Log Measured From: Kelly Bushing 10 Ft. Above Permanent Datum

THANK YOU FOR USING MIDWEST WIRELINE LLC  
 785-625-3858

<b>Your Midwest Wireline Crew</b> Engineer: J. Henrickson Operator: Operator: Operator:	<b>This Log Record Was Witnessed By</b> Primary Witness: Tom Denning Secondary Witness: Herb Deines Secondary Witness: Secondary Witness:
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# Log Variables

DatabaseC:\ProgramData\Warrior\Data\tdi\_munsch\_13.db  
Dataset field/well/stackml/pass4.1/\_vars\_

## Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	118	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	580	62	Off	3752

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 (10-PSI)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (915-956)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSI STKBL ML (PSI-02) Stackable Microlog Tools	7.58	4.00	65.00
RLL3F RLL3	15.80 15.80					
CILD	8.00		DIL-PSI HIGH TEMP (959-1032)	18.50	3.50	220.00

CILM 4.70

SP 0.20

Dataset: tdi\_munsch\_13.db: field/well/stackml/pass4.1  
 Total length: 43.08 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in



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## 2" SCALE RESISTIVITY

### MAIN PASS

Database File tdi\_munsch\_13.db  
 Dataset Pathname stackml/pass6.1  
 Presentation Format \_dil2in  
 Dataset Creation Thu Nov 11 13:07:04 2021  
 Charted by Depth in Feet scaled 1:600

0 Gamma Ray (GAPI) 150

1000 Conductivity (mmho/m) 0

15000 Line Tension (lb) 0

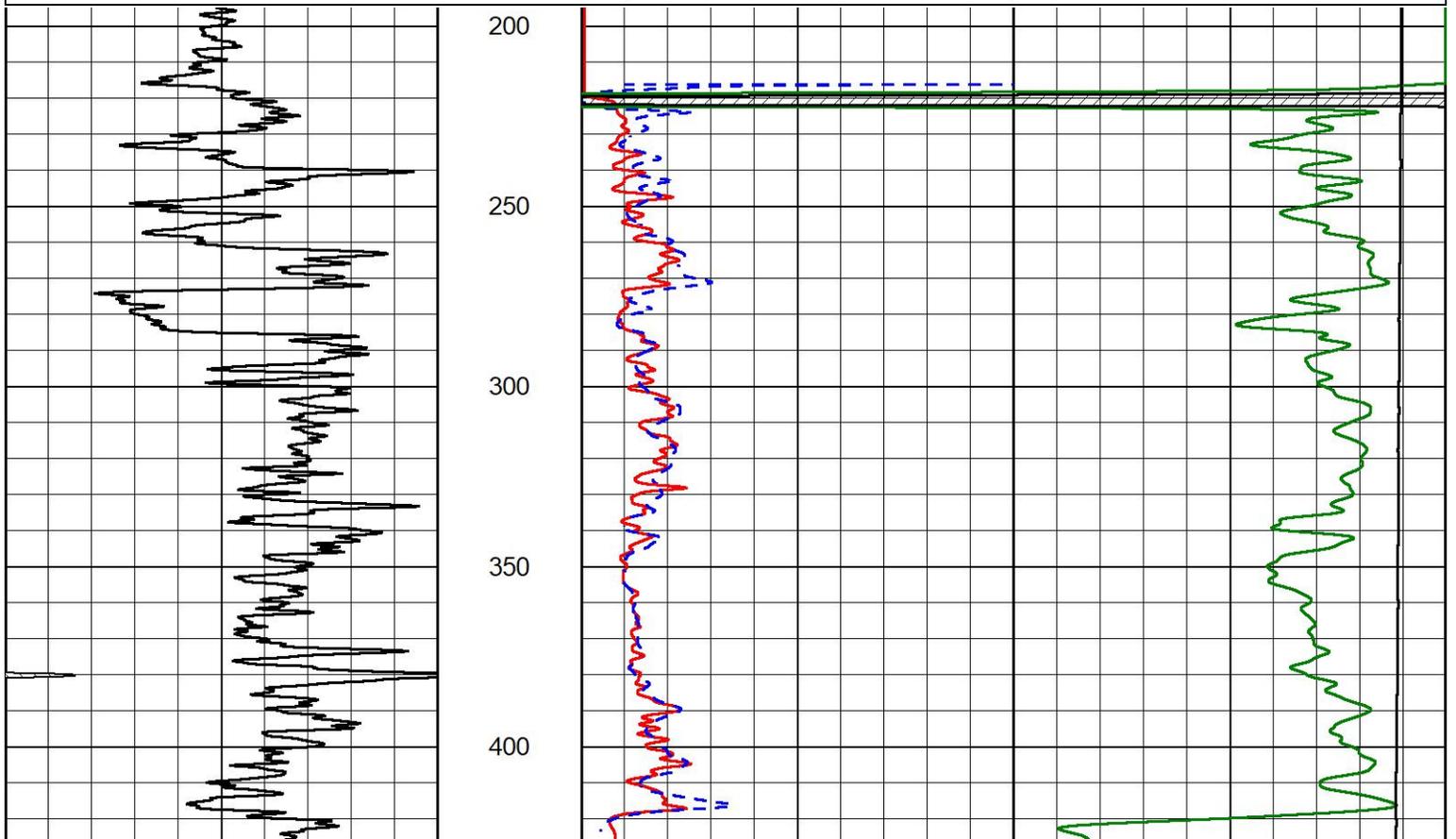
0 Shallow Resistivity (Ohm-m) 50

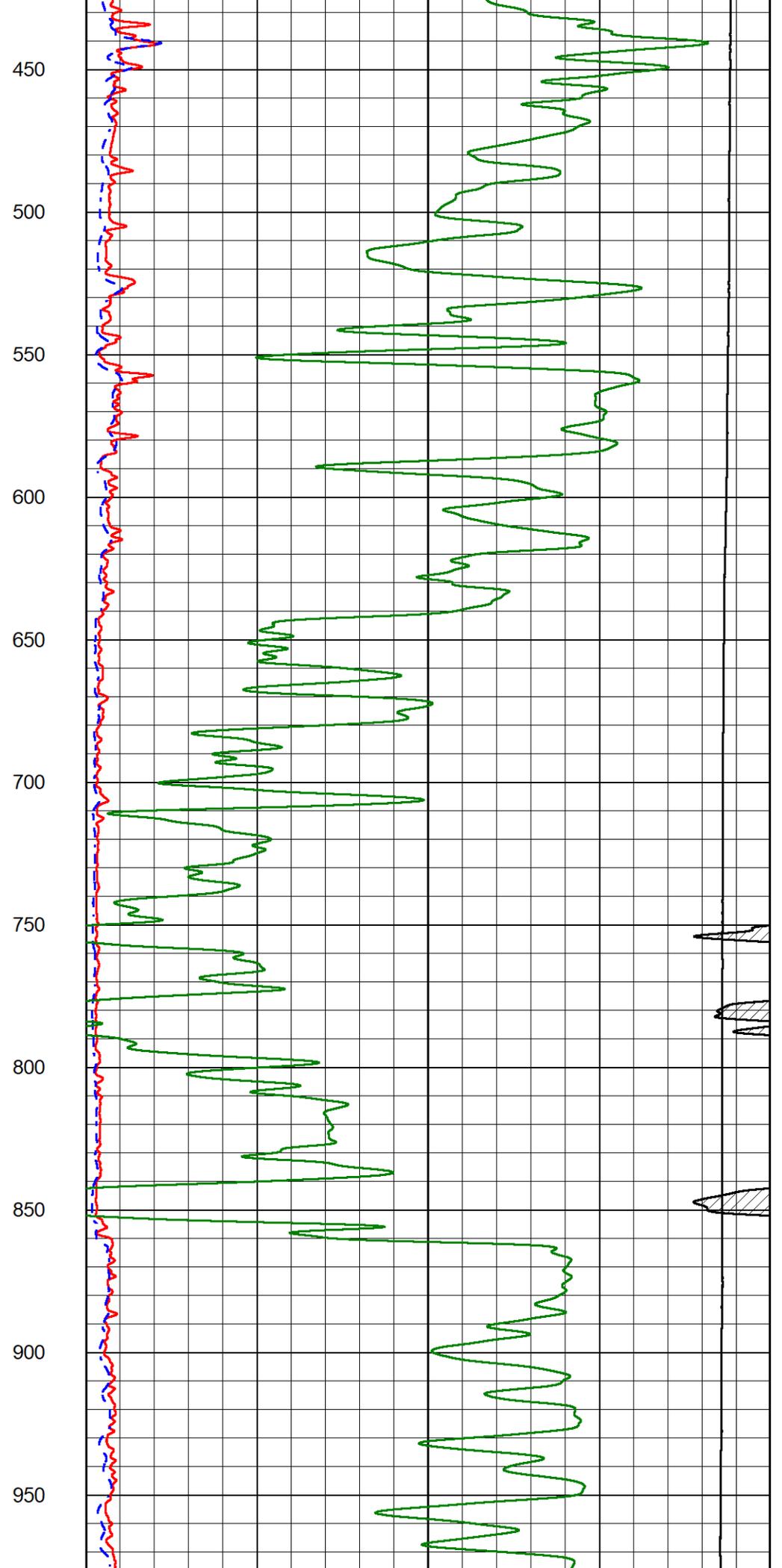
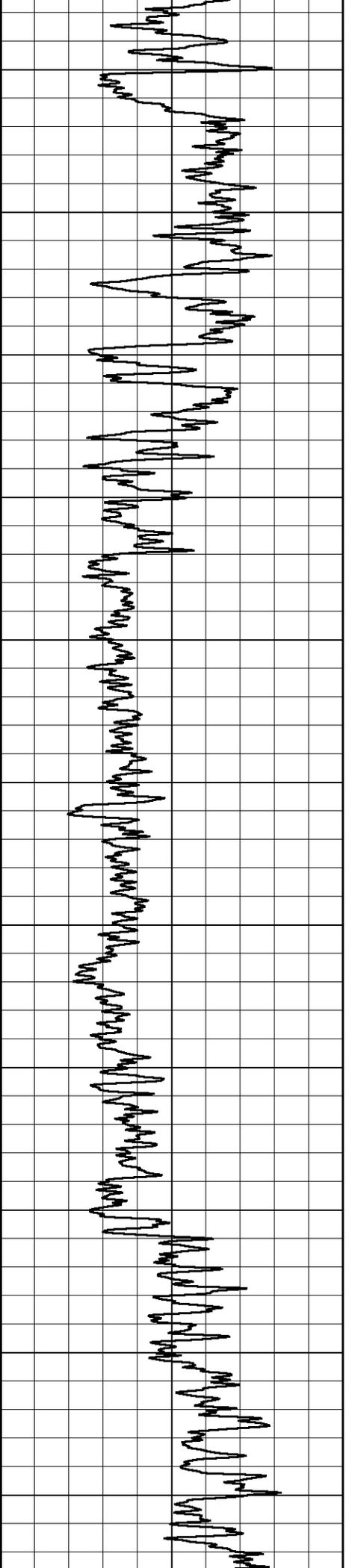
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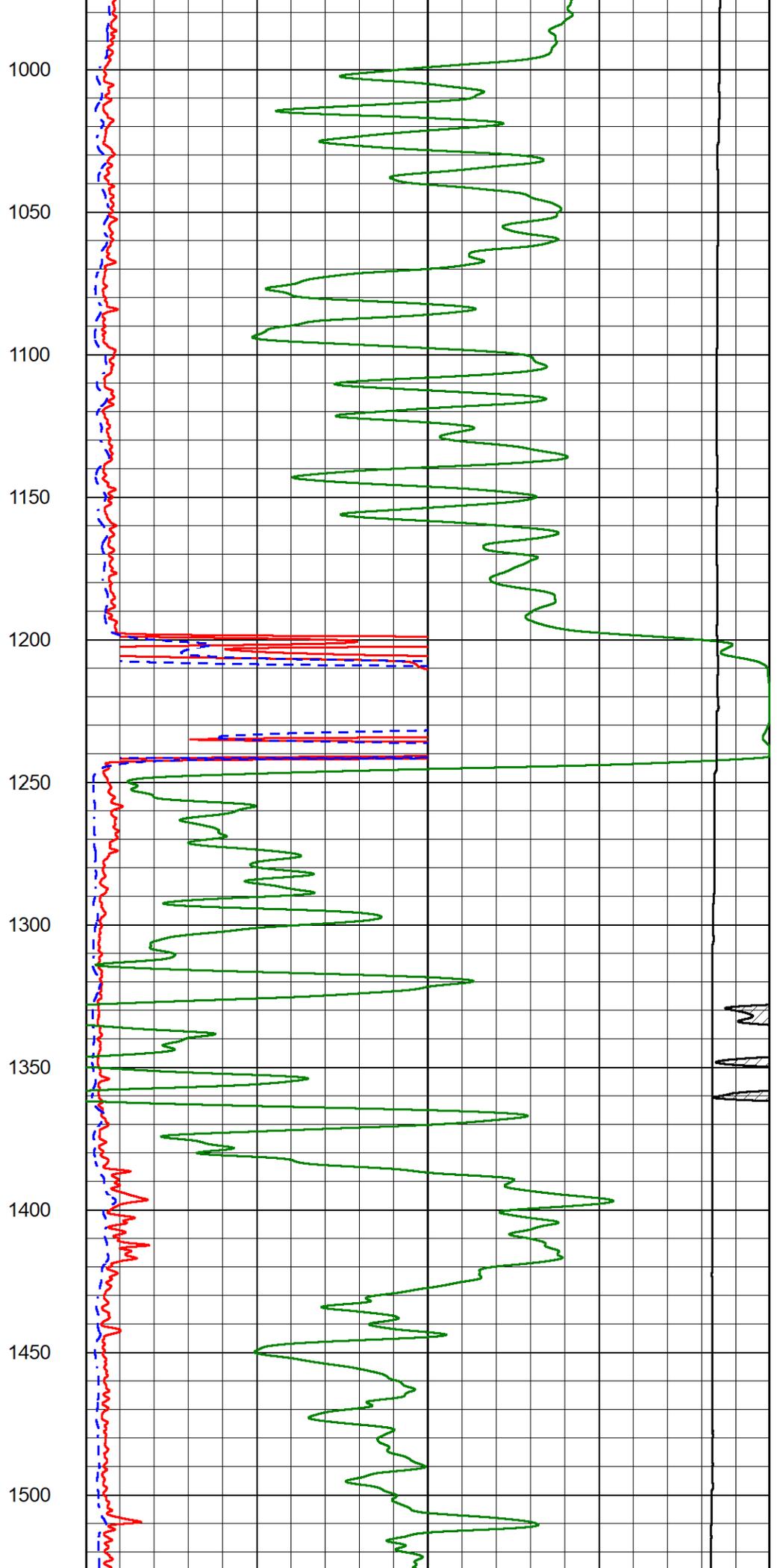
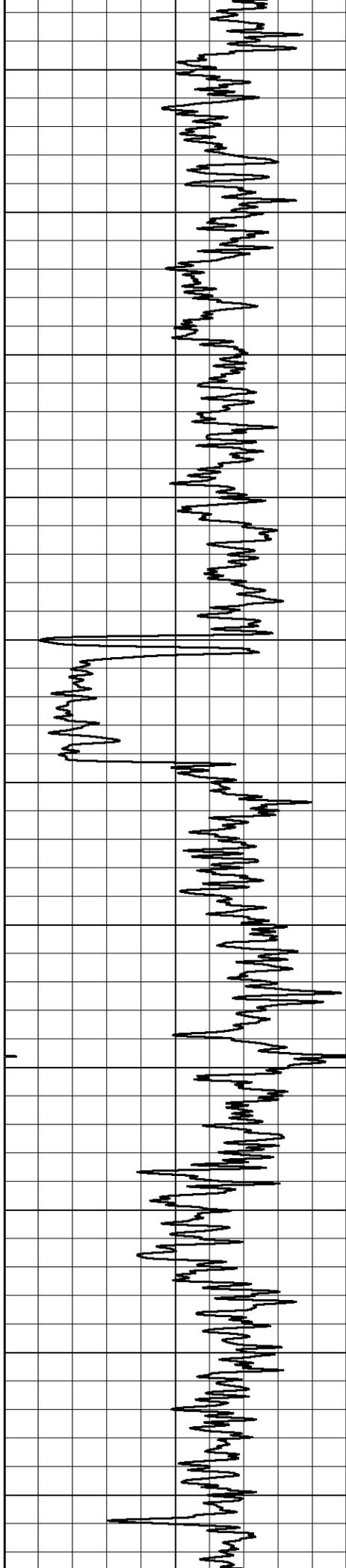
Shallow Resistivity

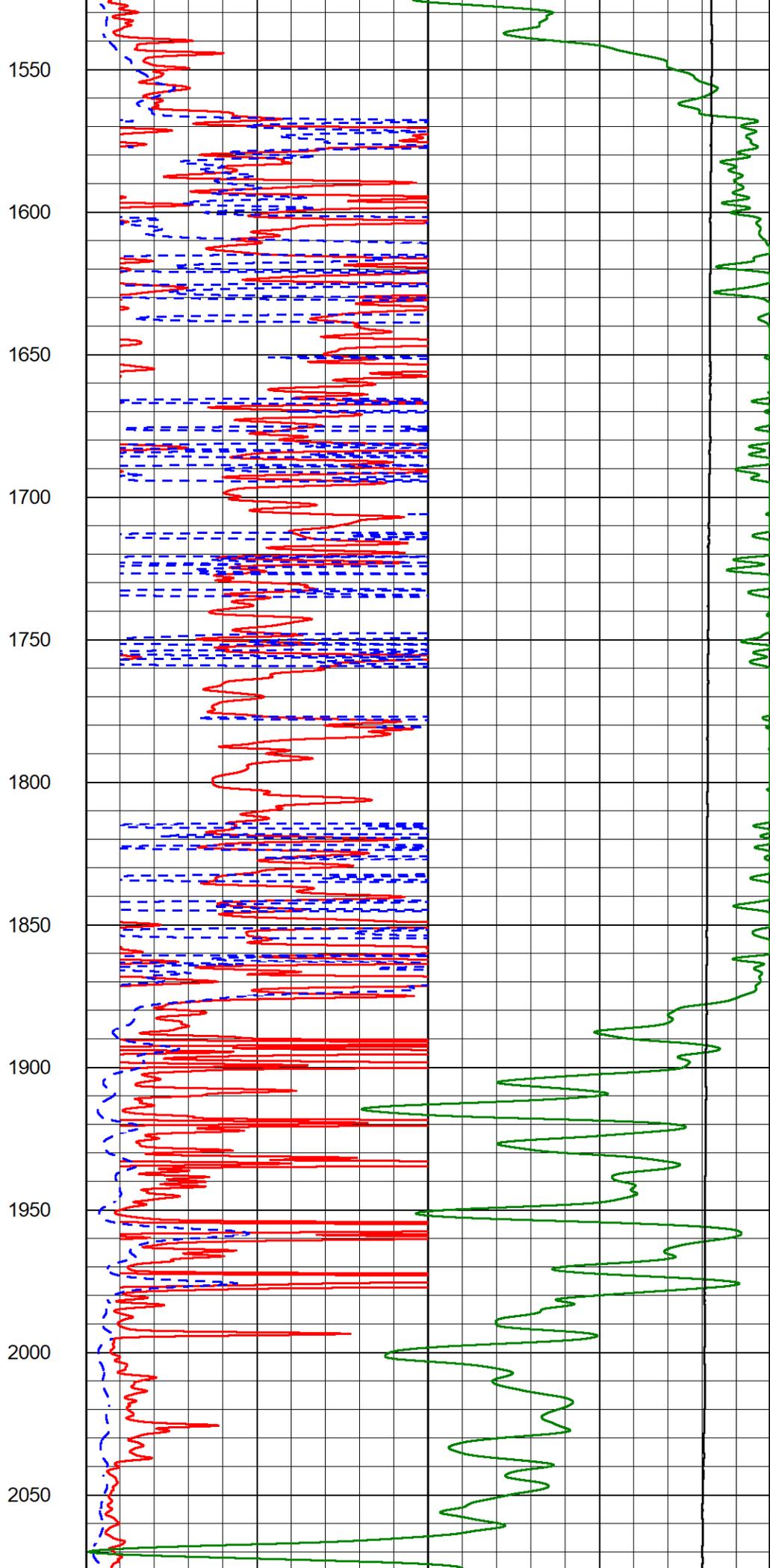
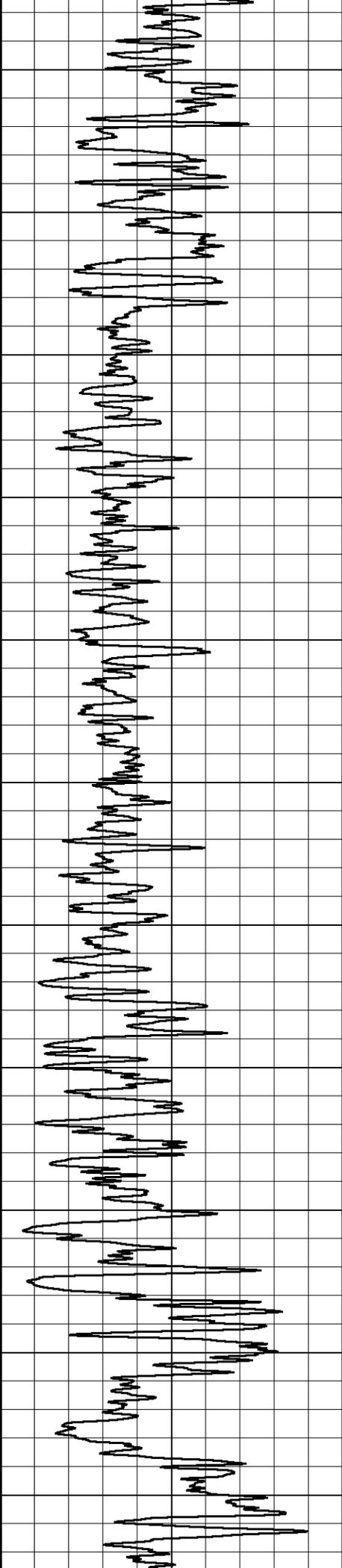
50 (Ohm-m) 200

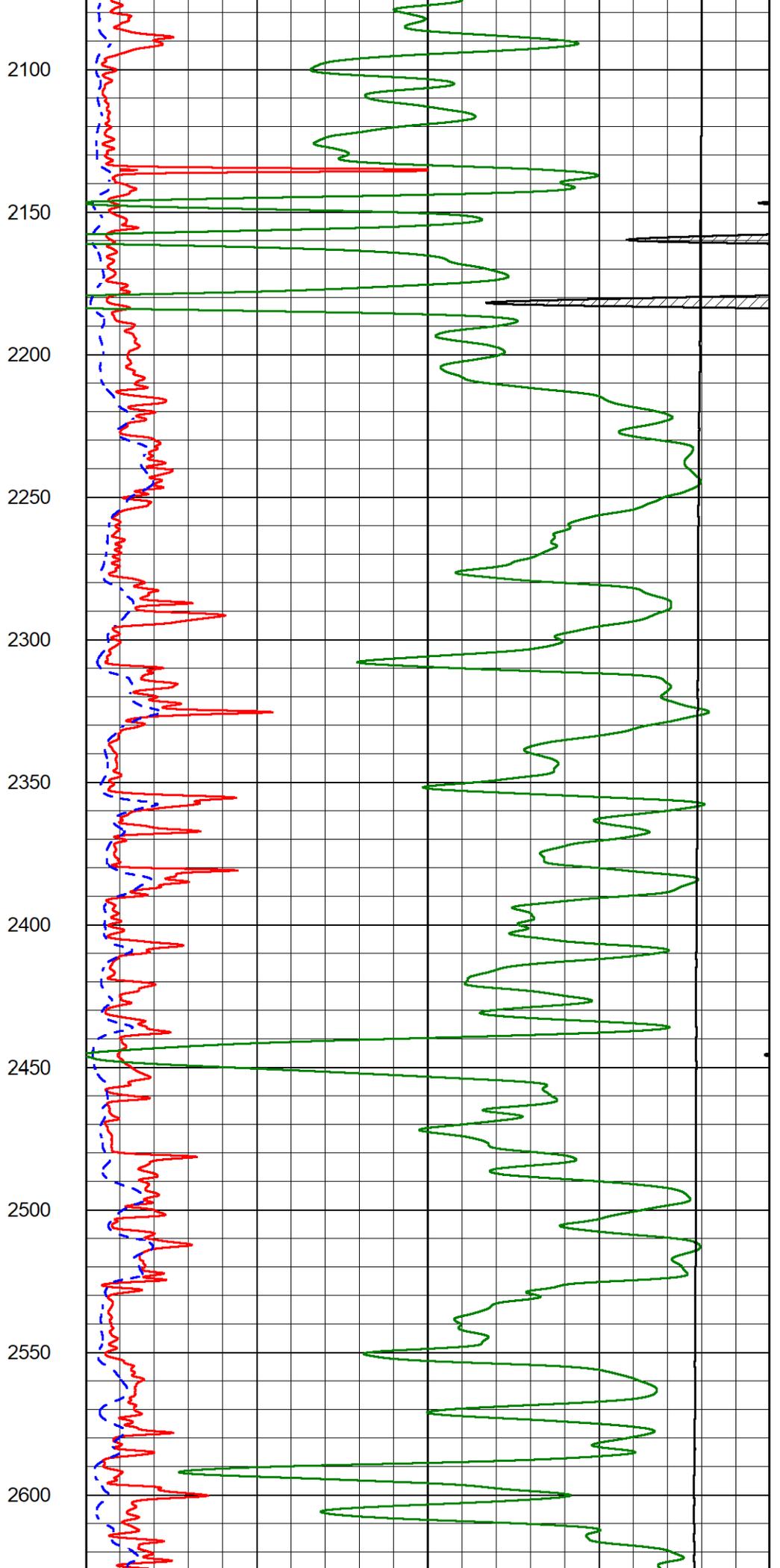
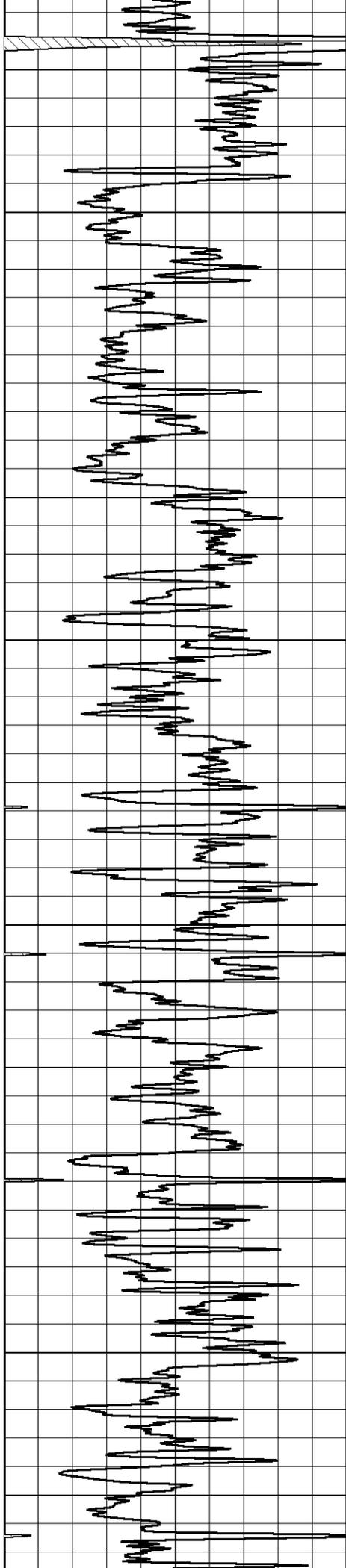
50 Deep Resistivity (Ohm-m) 200

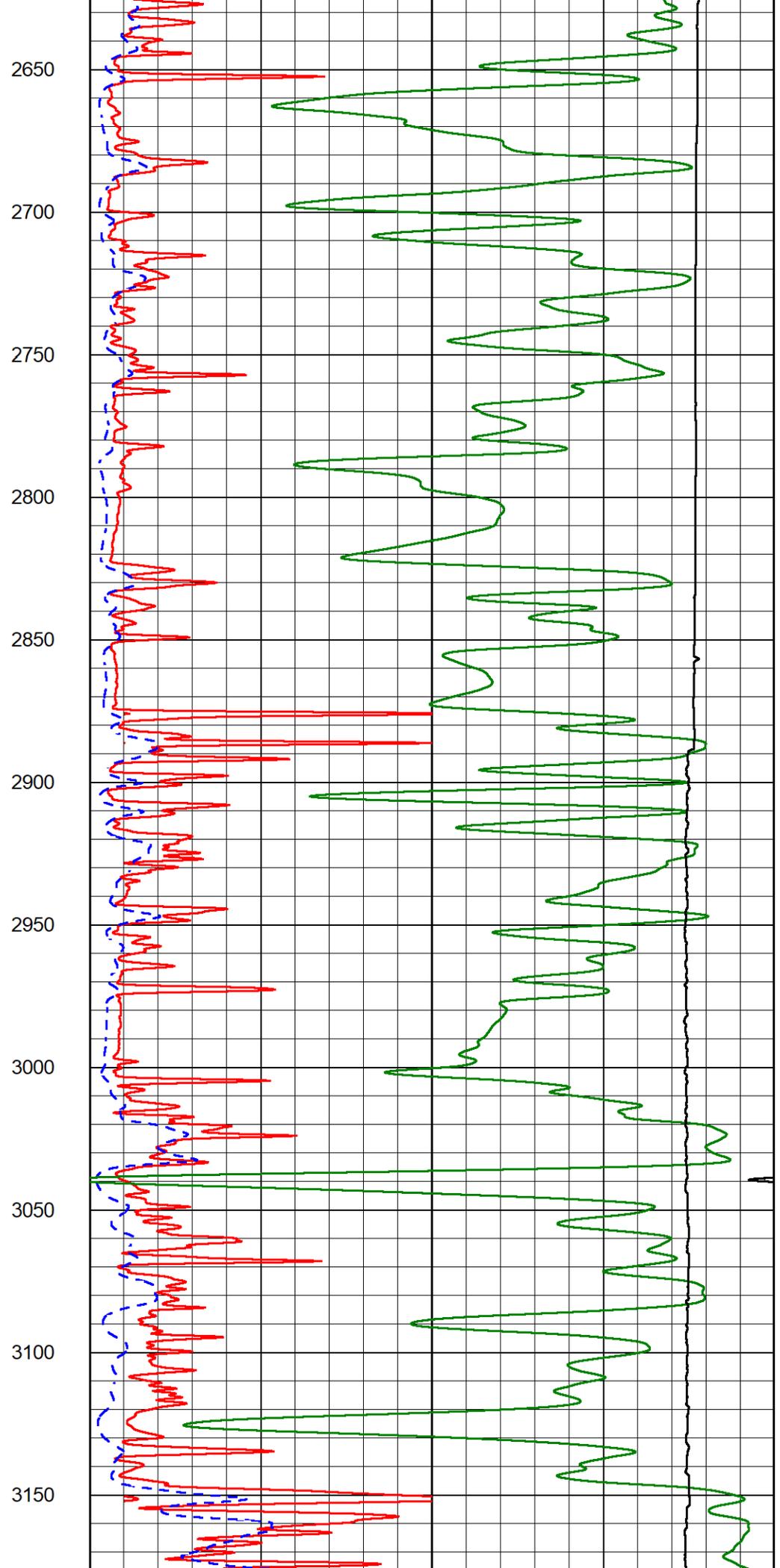
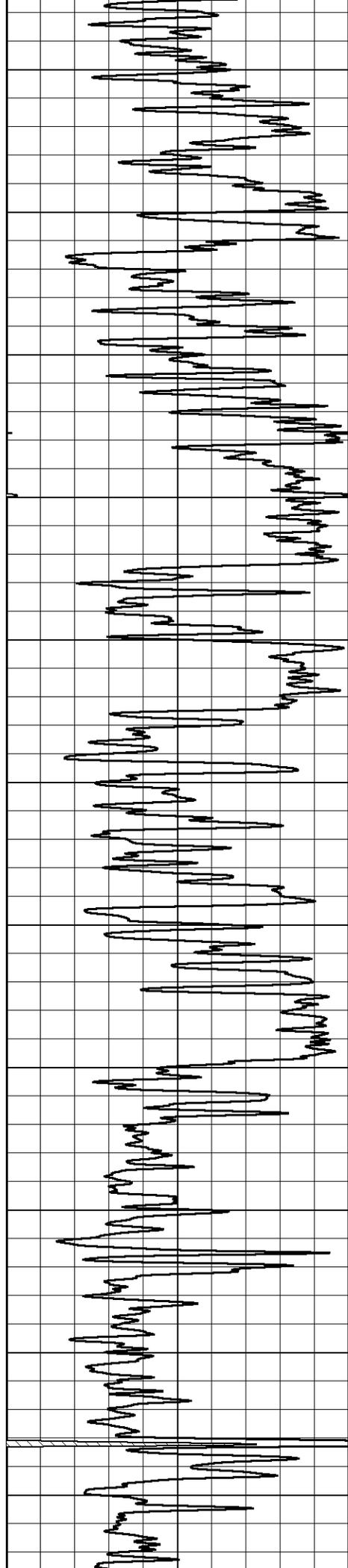


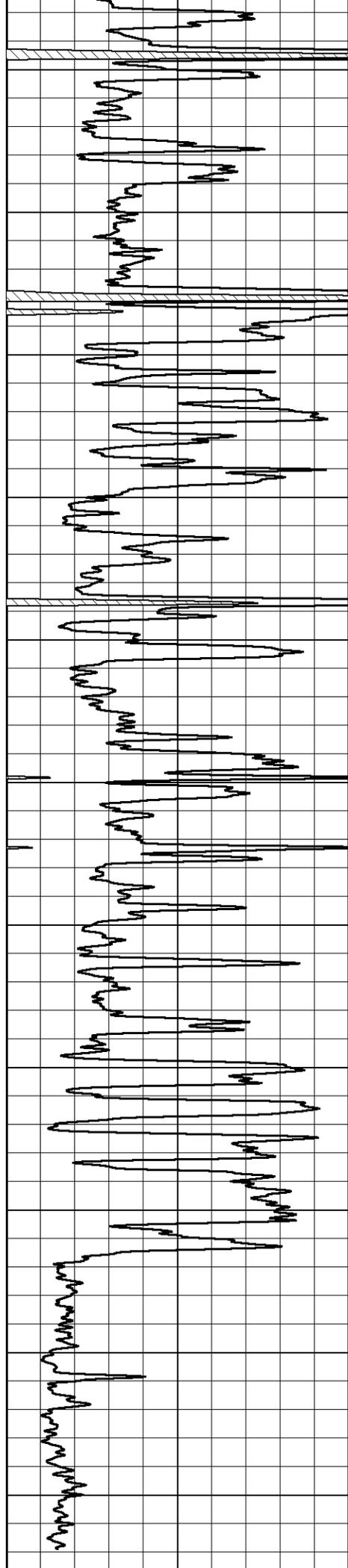












3200

3250

3300

3350

3400

3450

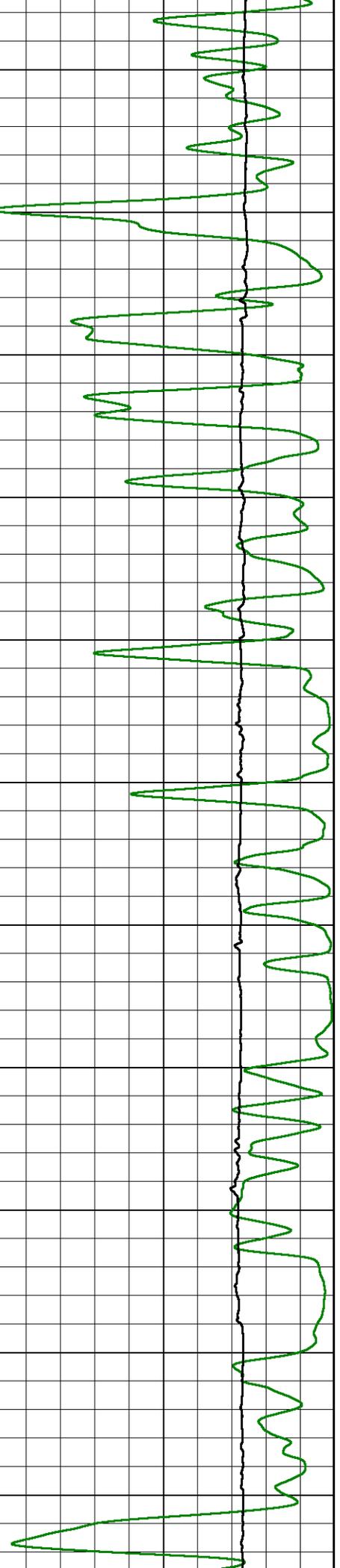
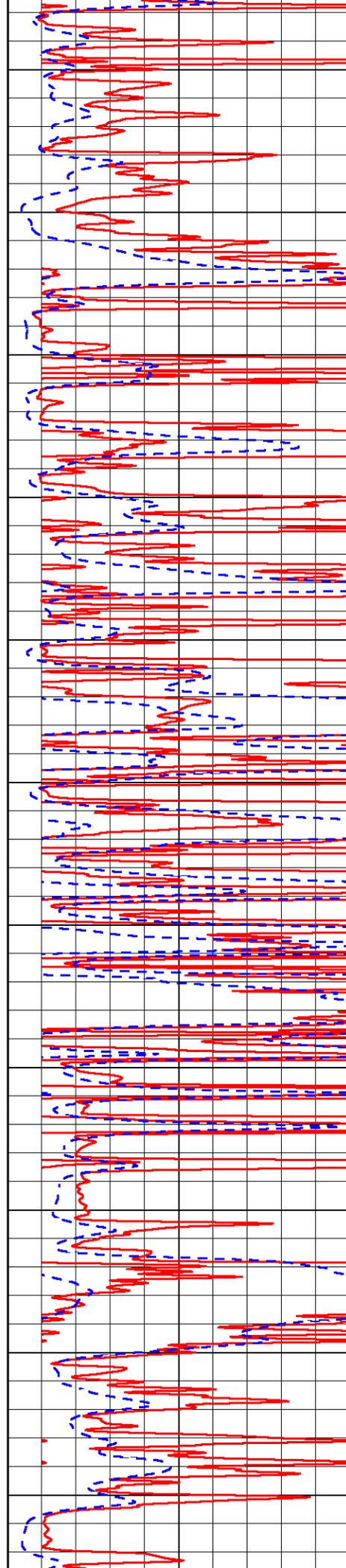
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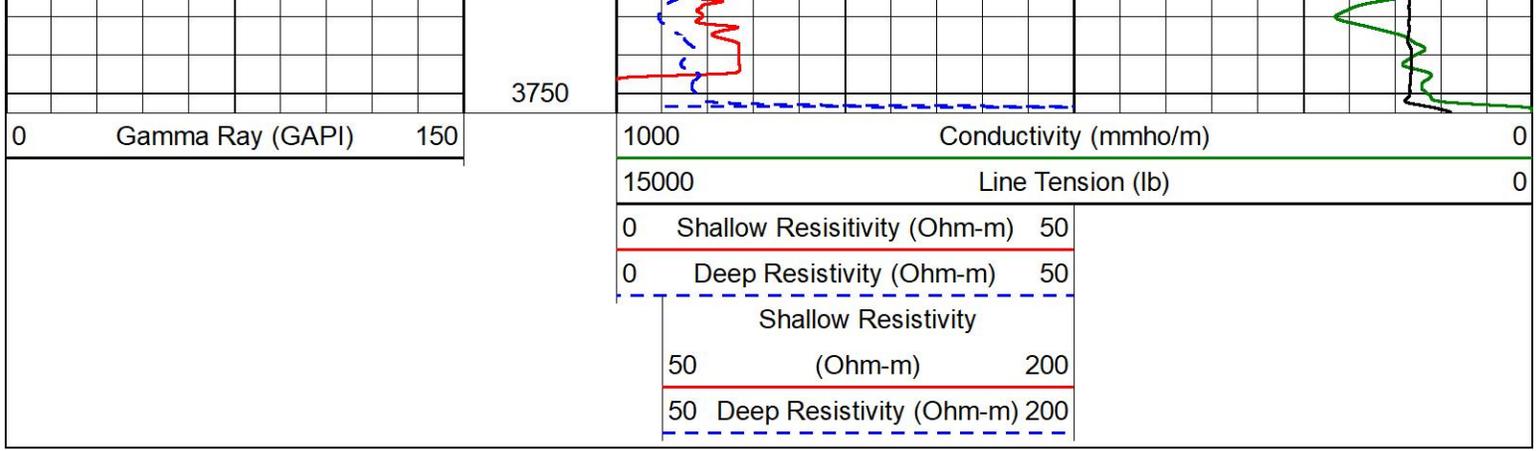
3550

3600

3650

3700



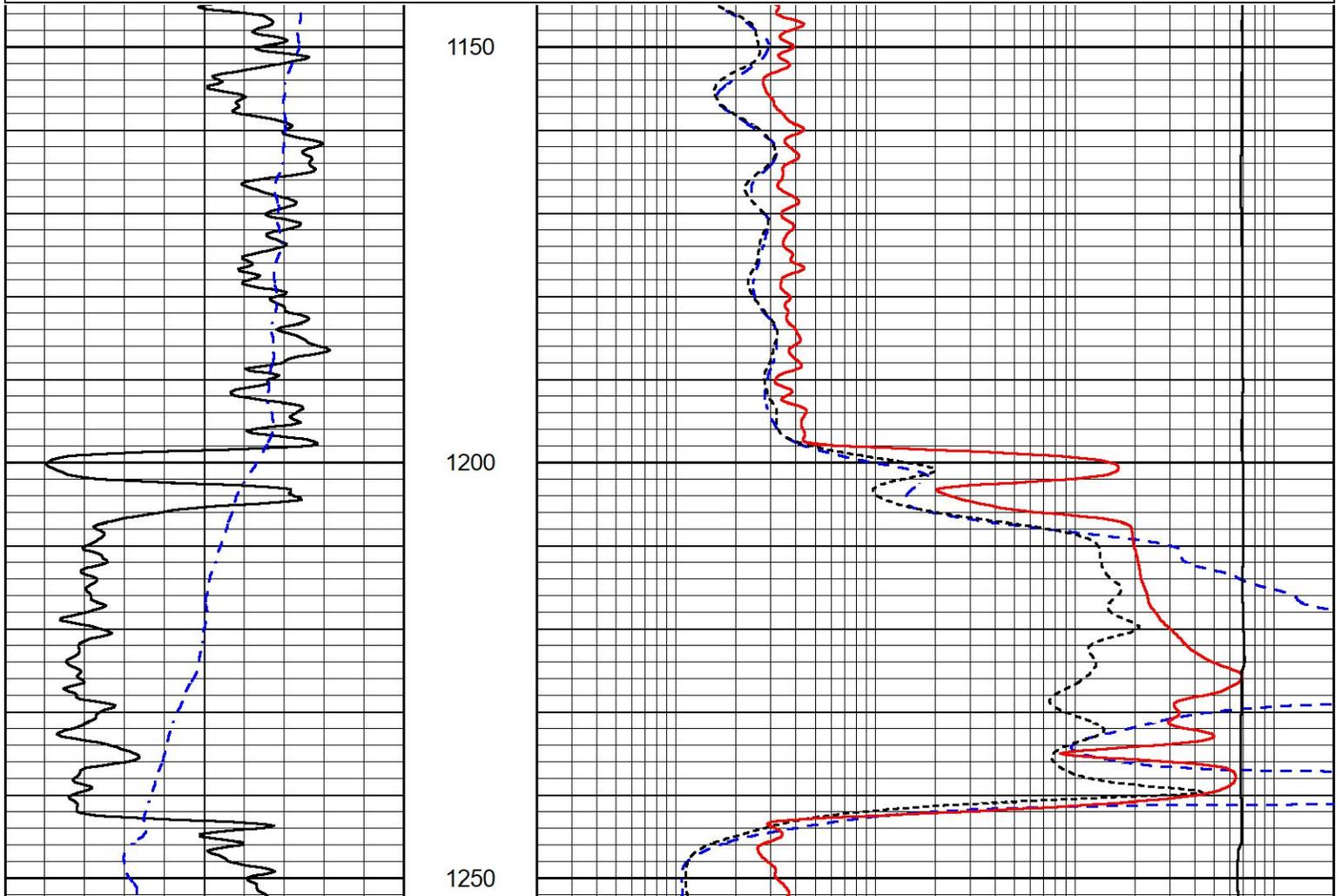
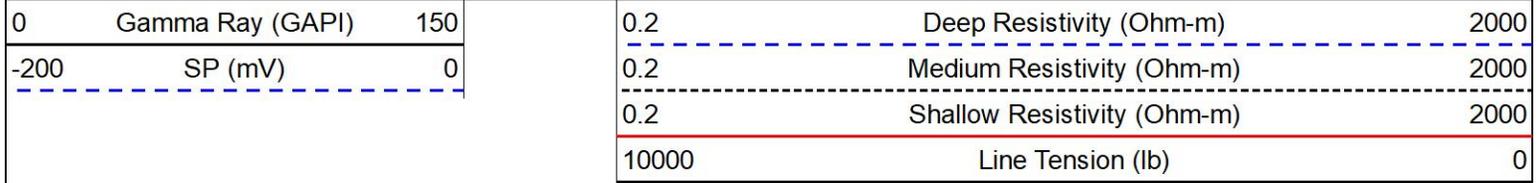


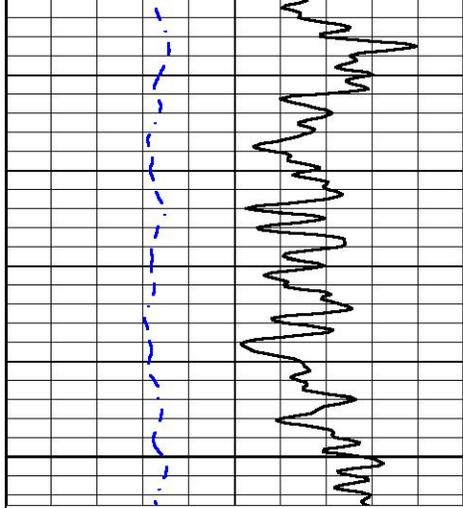
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# ANHYDRITE SECTION

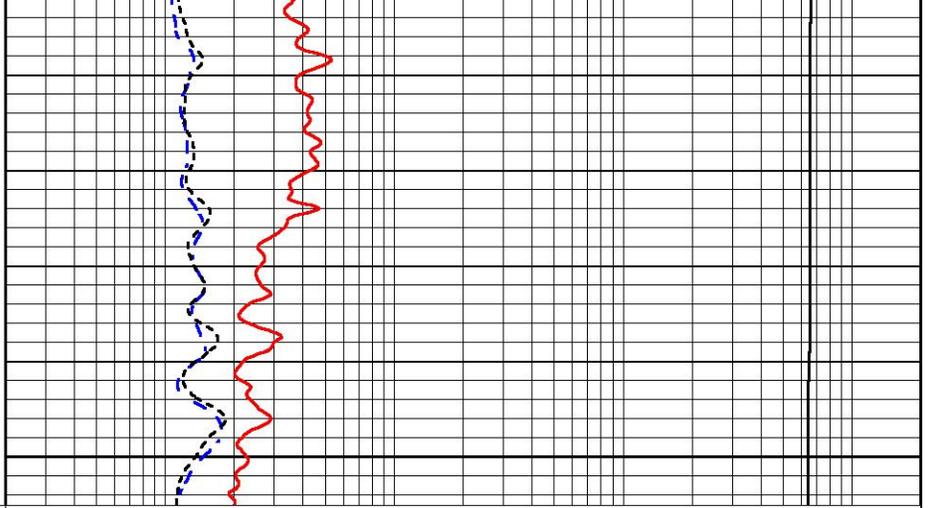
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Database File tdi\_munsch\_13.db  
 Dataset Pathname stackml/pass5.1  
 Presentation Format \_dil  
 Dataset Creation Thu Nov 11 13:06:40 2021  
 Charted by Depth in Feet scaled 1:240





1300



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	Shallow Resistivity (Ohm-m)	2000
10000	Line Tension (lb)	0



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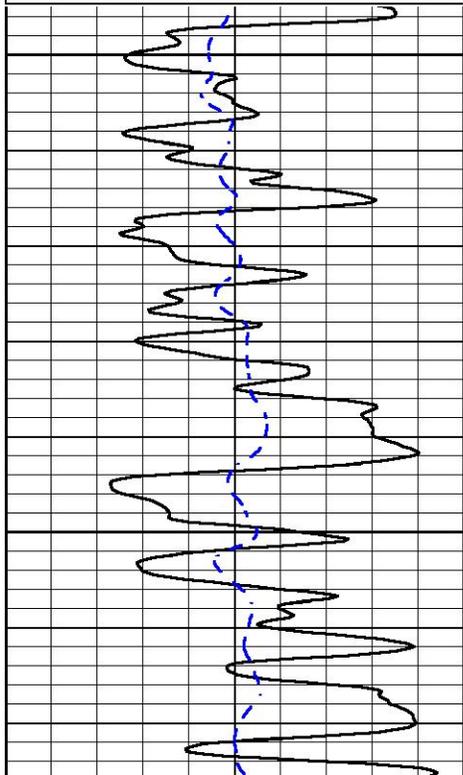
## DETAIL SECTION

### MAIN PASS

Database File tdi\_munsch\_13.db  
 Dataset Pathname stackml/pass4.1  
 Presentation Format \_dil  
 Dataset Creation Thu Nov 11 12:31:05 2021  
 Charted by Depth in Feet scaled 1:240

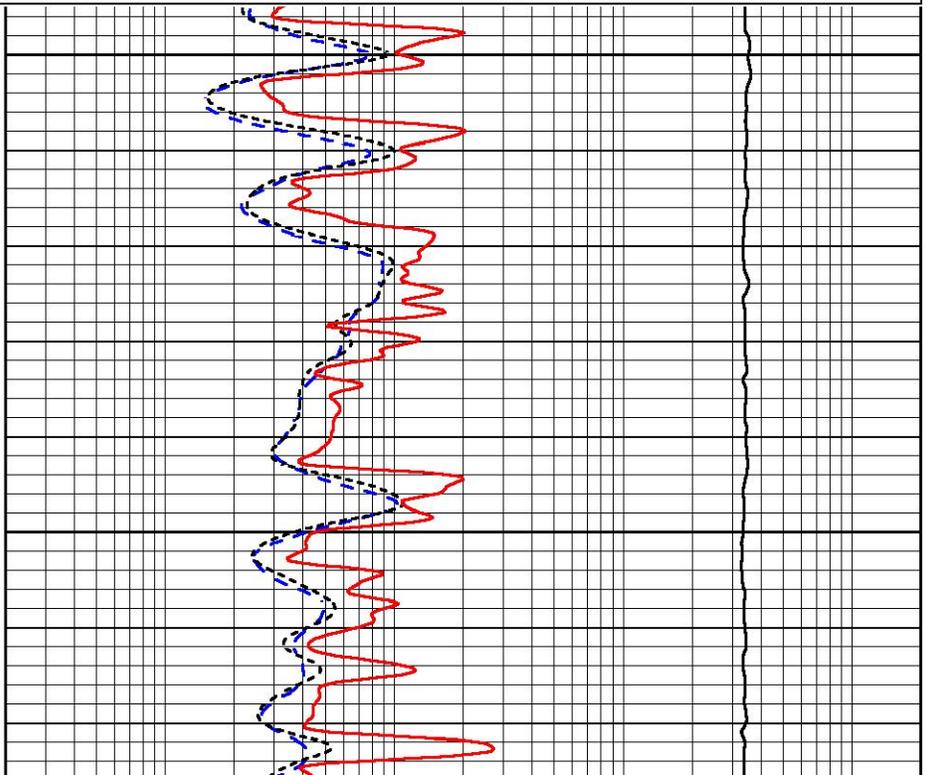
0	Gamma Ray (GAPI)	150
-200	SP (mV)	0

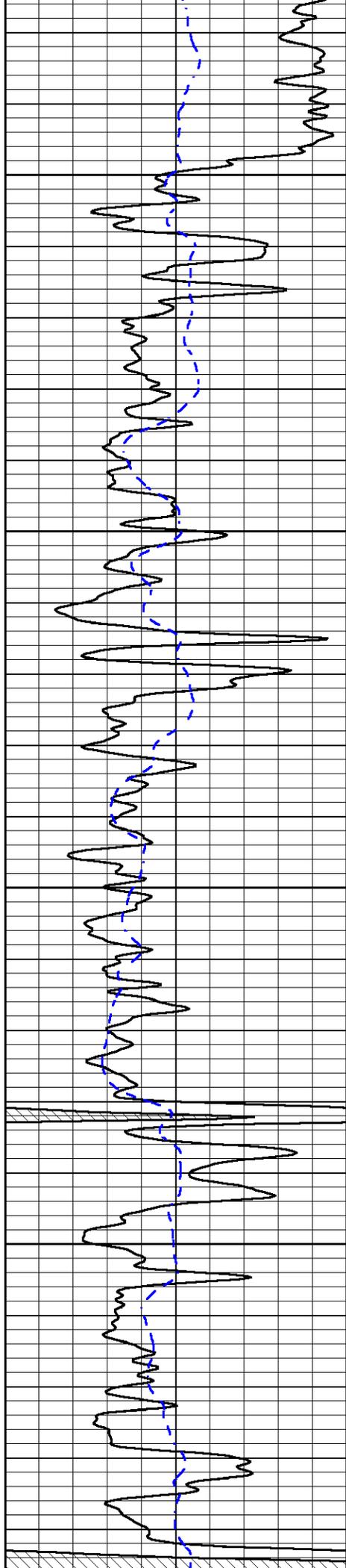
0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	Shallow Resistivity (Ohm-m)	2000
10000	Line Tension (lb)	0



2900

2950



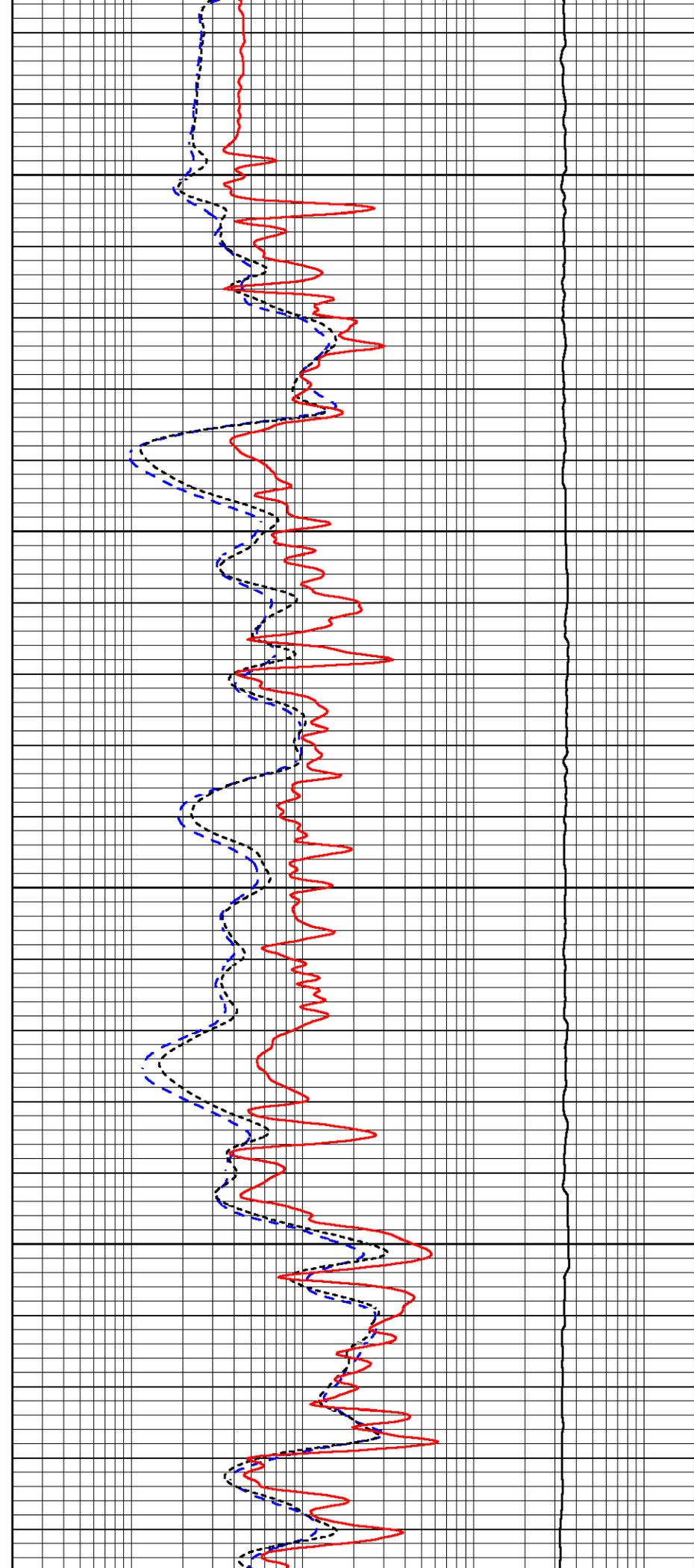


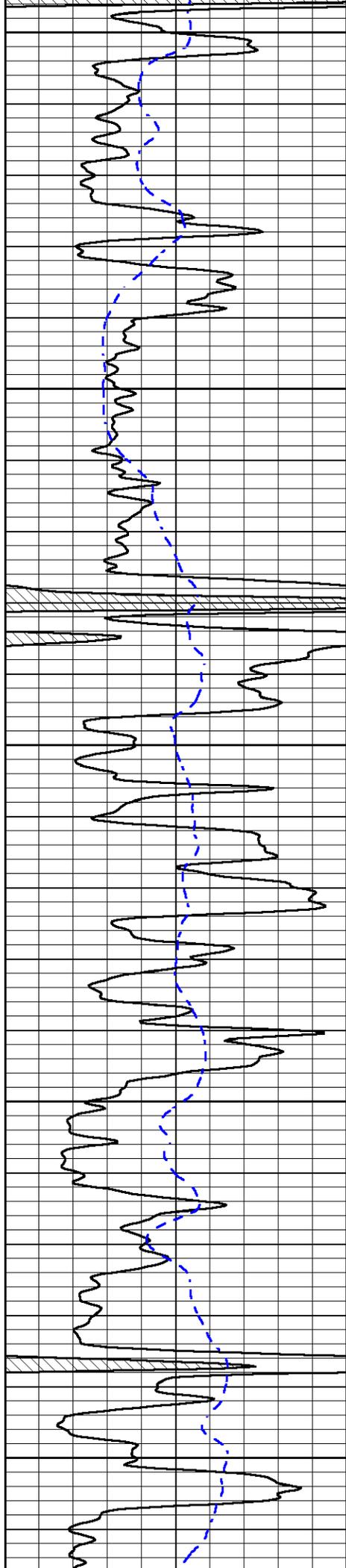
3000

3050

3100

3150





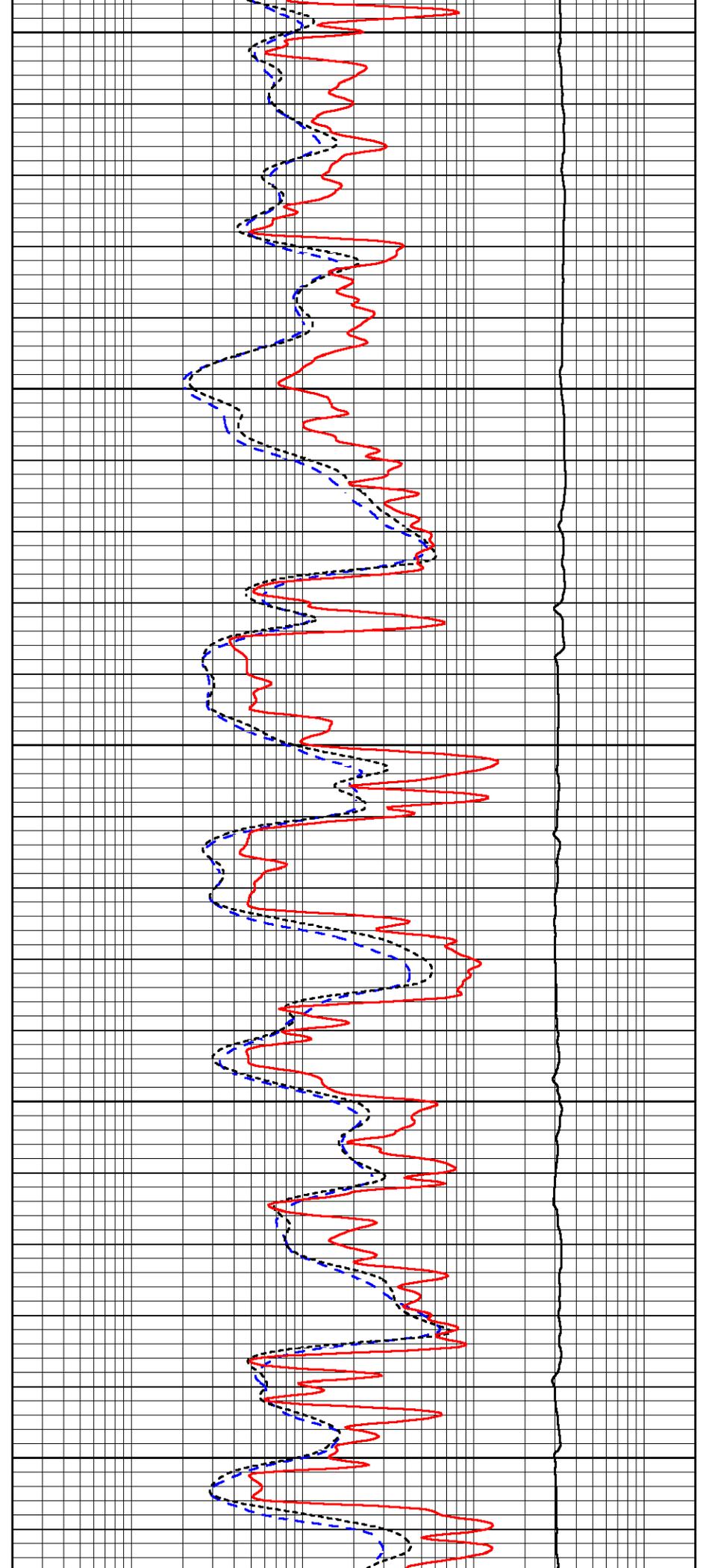
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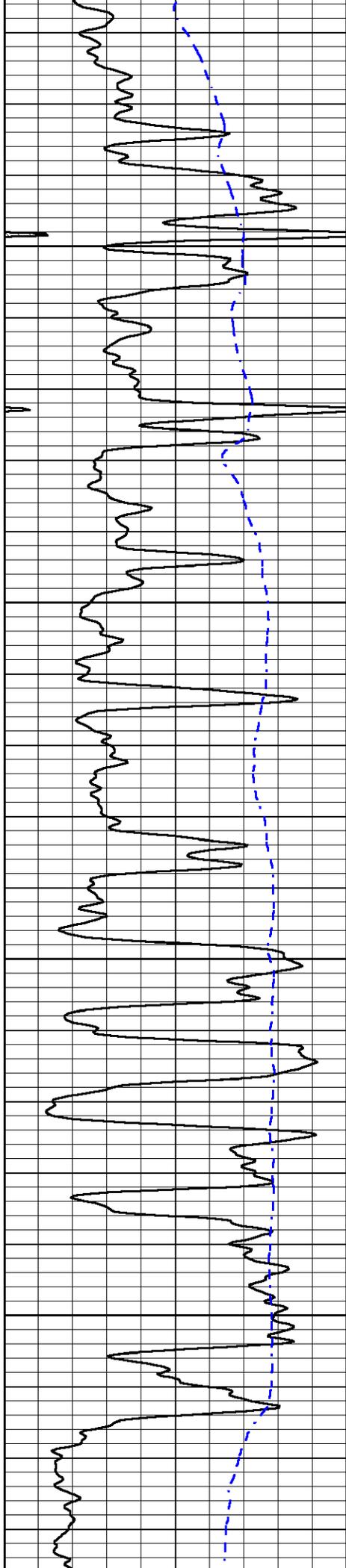
3250

3300

3350

3400



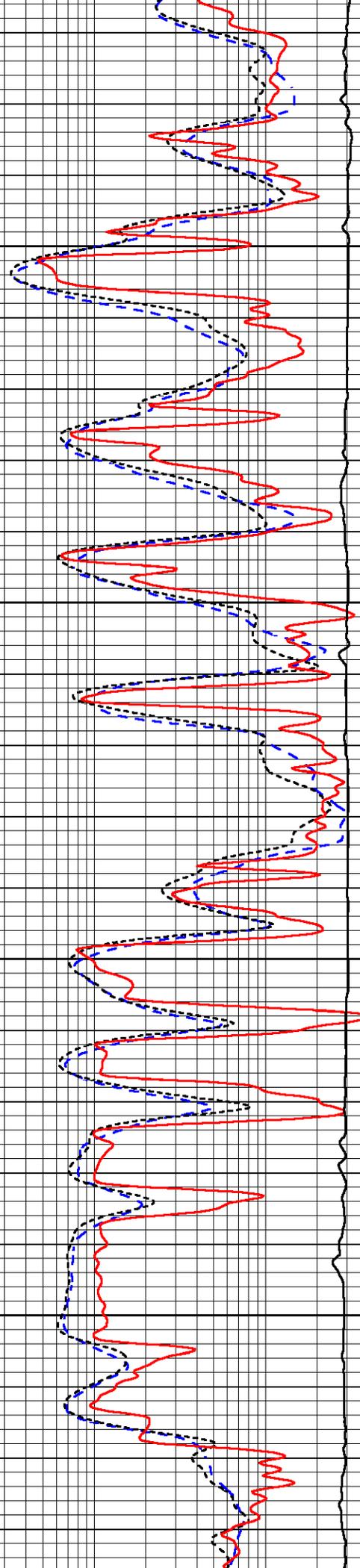


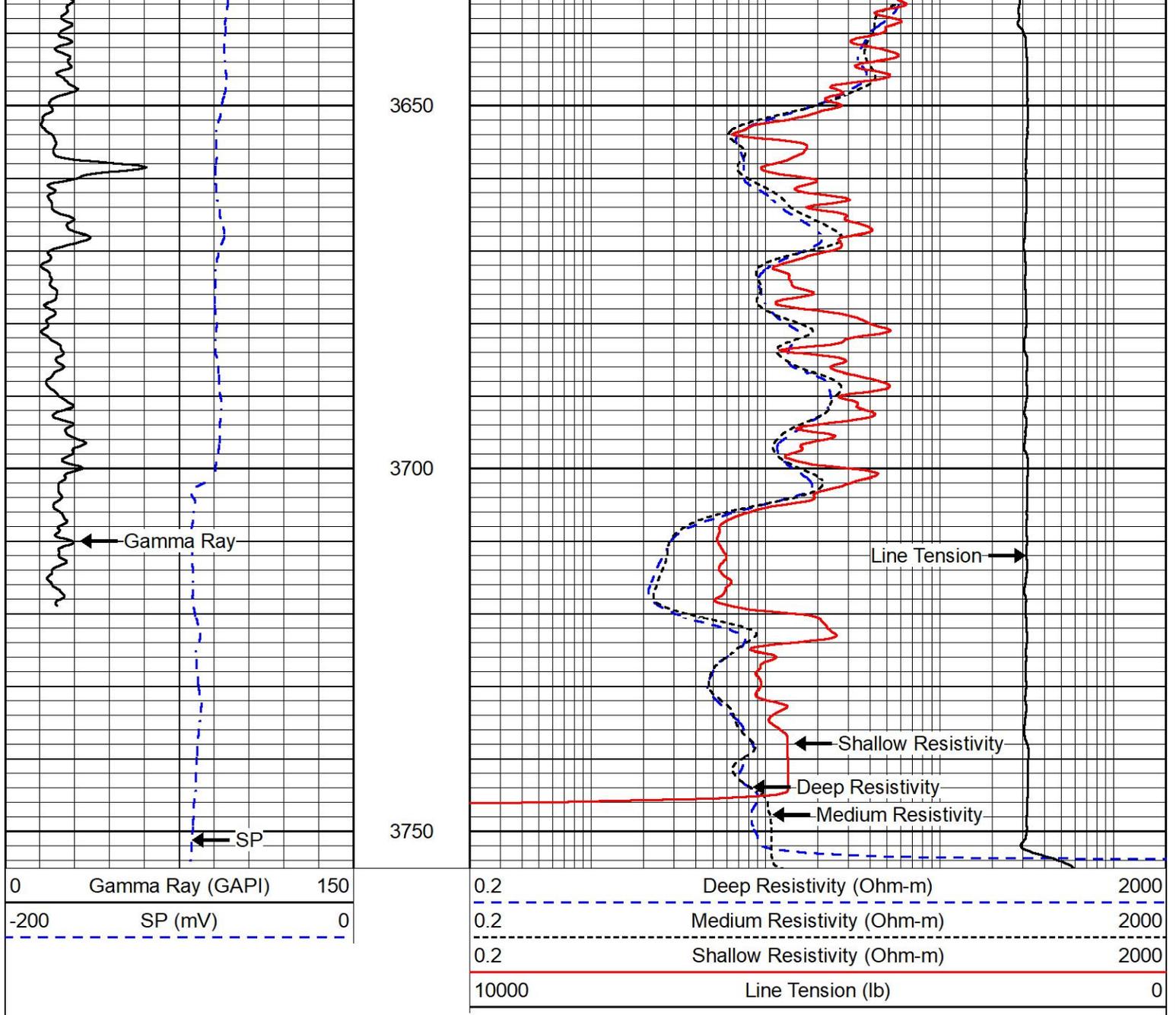
3450

3500

3550

3600



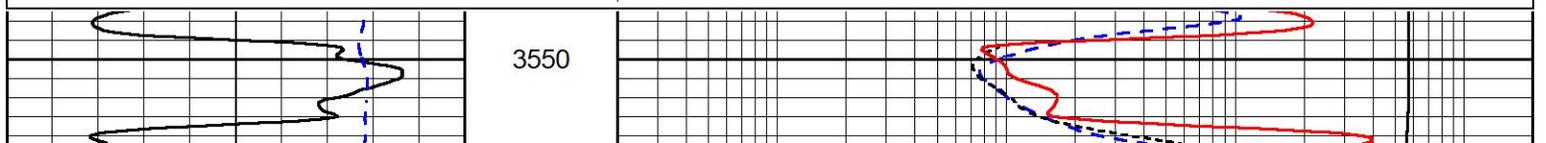


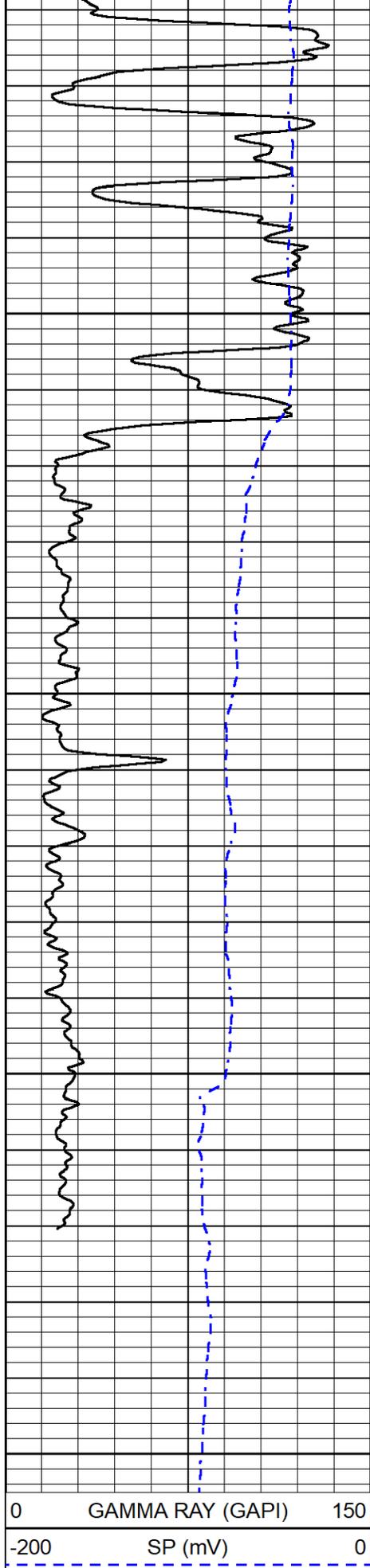
# REPEAT SECTION

## REPEAT PASS

Database File tdi\_munsch\_13.db  
 Dataset Pathname stackml/pass2.1  
 Presentation Format dil  
 Dataset Creation Thu Nov 11 12:30:06 2021  
 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





3600

3650

3700

3750

