



MIDWEST WIRELINE

DUAL INDUCTION

Company: Darrah Oil Company, LLC
 Well: Sangster-UP Unit #1-13
 Field: SHS
 County: Logan
 State: Kansas

Company: Darrah Oil Company, LLC
 Well: Sangster-UP Unit #1-13
 Field: SHS
 County: Logan
 State: Kansas

Location: 112 FSL & 157 FWL
 SEC 13 TWP 14S RGE 34W
 Permanent Datum: Ground Level Elevation 3008
 Log Measured From: Kelly Bushing
 Drilling Measured From: Kelly Bushing
 Other Services: CNL/CDL MEL/BHCS
 Elevation: 3013
 K.B.: 3013
 D.F.:
 G.L.: 3008

Date	11/11/2025
Run Number	One
Depth Driller	4680
Depth Logger	4678
Bottom Logged Interval	4677
Top Log Interval	200
Casing Driller	8:625 @ 218
Casing Logger	217
Bit Size	7.875
Type Fluid in Hole	Chemical
Salinity, ppm CL	Full
Density / Viscosity	9.3 52
pH / Fluid Loss	11.0 8.8
Source of Sample	Flowline
Rm @ Meas. Temp	0.60 @ 50
Rmt @ Meas. Temp	0.45 @ 50
Rmc @ Meas. Temp	0.81 @ 50
Source of Rmf / Rmc	Charts
Rm @ BHT	0.24 @ 123
Operating Rig Time	5 Hours
Max Rec. Temp. F	123
Equipment Number	110
Location	Hays, KS
Recorded By	D. Schmidt
Witnessed By	Saman Sharifaie

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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.

Monument,
 South on 350 to Indian Rd,
 2 West, 1 North to location

Log Measured From: Kelly Bushing 5 Ft. Above Permanent Datum

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

Your Midwest Wireline Crew

Engineer: D. Schmidt
 Operator:
 Operator:
 Operator:

This Log Record Was Witnessed By

Primary Witness: Saman Sharifaie
 Secondary Witness:
 Secondary Witness:
 Secondary Witness:

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.23		GR-M&W (105)	3.00	3.50	50.00
CNLSC CNSSC	37.13 36.38		CNT-M&W (210)	5.00	3.50	100.00
LCAL	28.21		MWLith-STEP LITHO Short (701-03)	8.40	5.00	250.00
LLW8N	28.21		ML-PSI STKBL ML (402)	7.58	4.00	65.00
LLW7N	28.21					
LLW6N	28.21					
LLW5N	28.21					
LLW4N	28.21					
LLW3N	28.21					
LLW2N	28.21					
LLW1N	28.21					
LSLOCK	27.96					
LLLOCK	27.96					
PELTMPR	27.96		DIL-M&W (504 HT)	18.25	3.50	220.00
LSHVNG	27.96					
LLHVNG	27.96					
LSW8N	27.71					
LSW7N	27.71					
LSW6N	27.71					
LSW5N	27.71					
LSW4N	27.71					
LSW3N	27.71					
LSW2N	27.71					
LSW1N	27.71					
MCAL	19.58					
MI	19.58					
MN	19.58					
RLL3F	15.50					
RLL3	15.50					
CILD	8.33					
CILM	4.50					
SP	0.20					

Dataset: darrah_sangster-up unit 1-13.db: field/well/stkml/pass3.5
 Total length: 42.23 ft
 Total weight: 685.00 lb
 O.D.: 5.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\darrah_sangster-up unit 1-13.db
 Dataset field/well/stkml/pass3.5/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	123	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	No	0	0	517	40	Off	4678



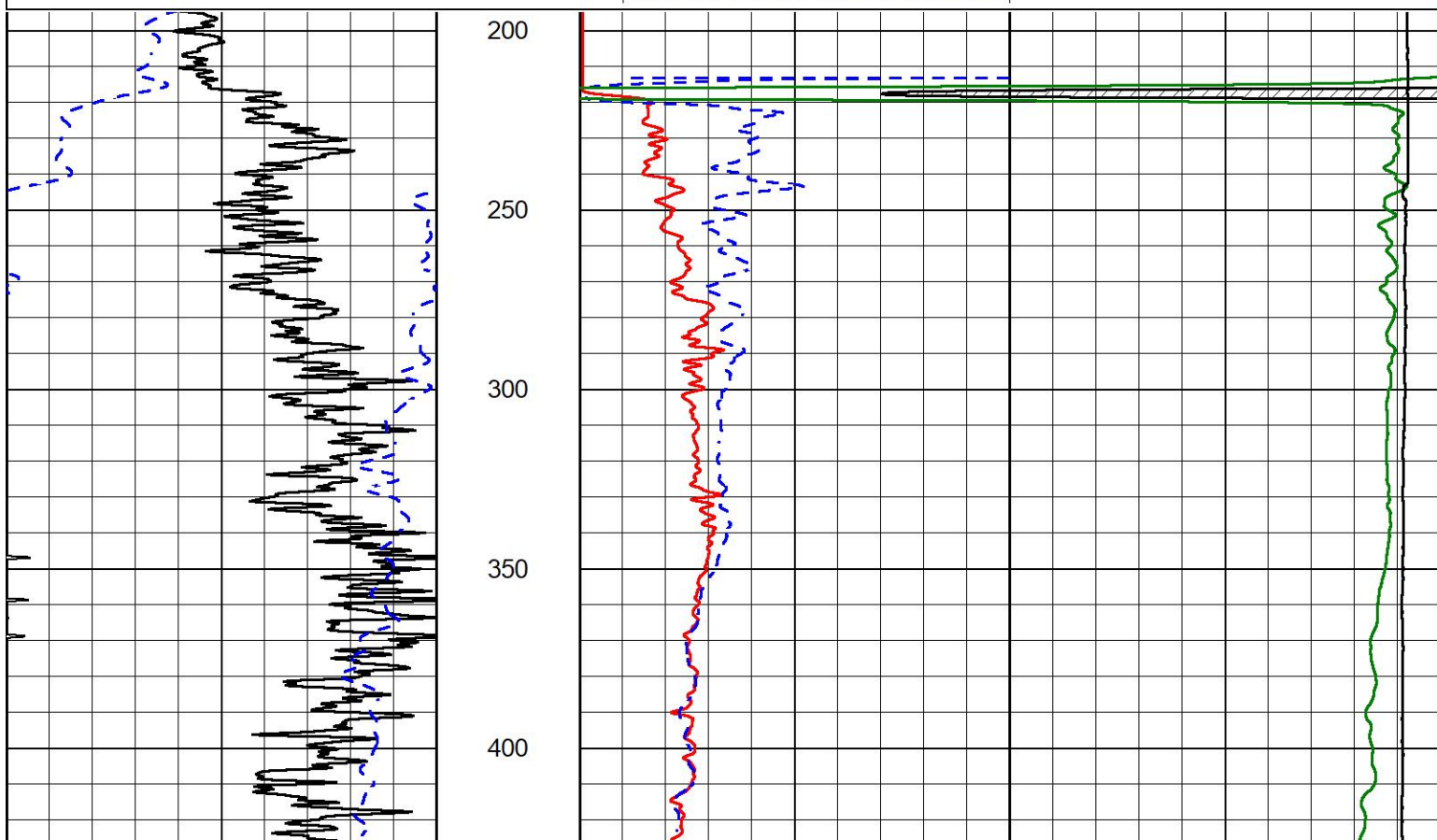
MIDWEST WIRELINE

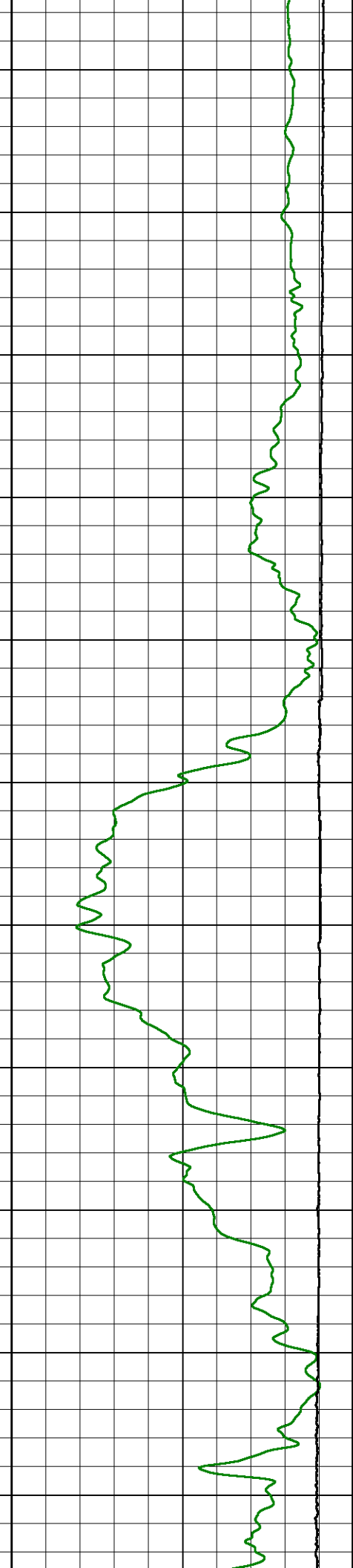
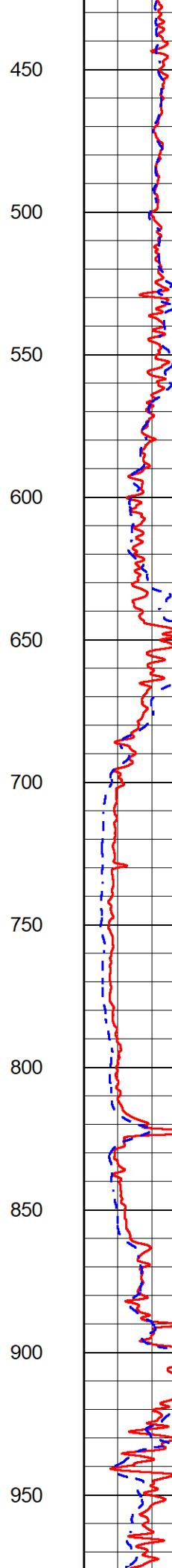
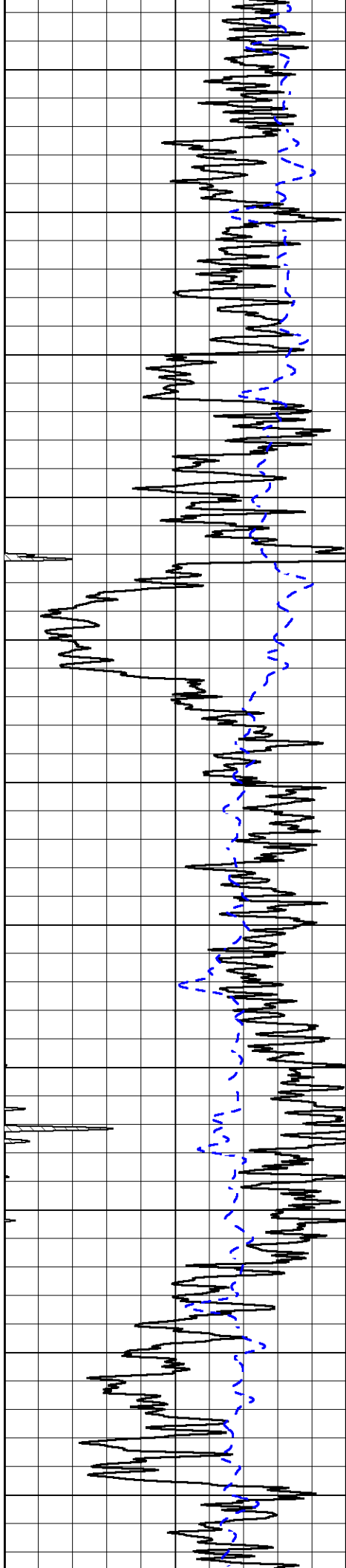
2" SCALE RESISTIVITY

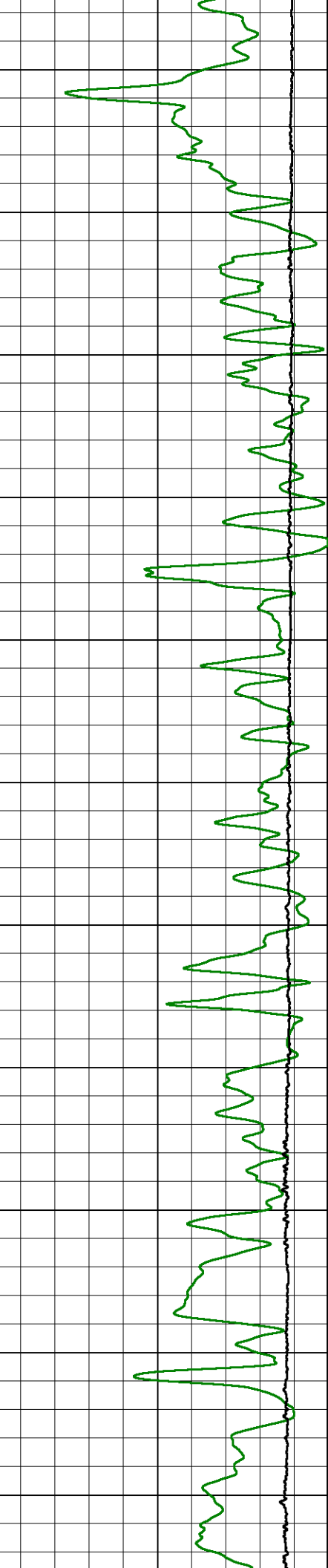
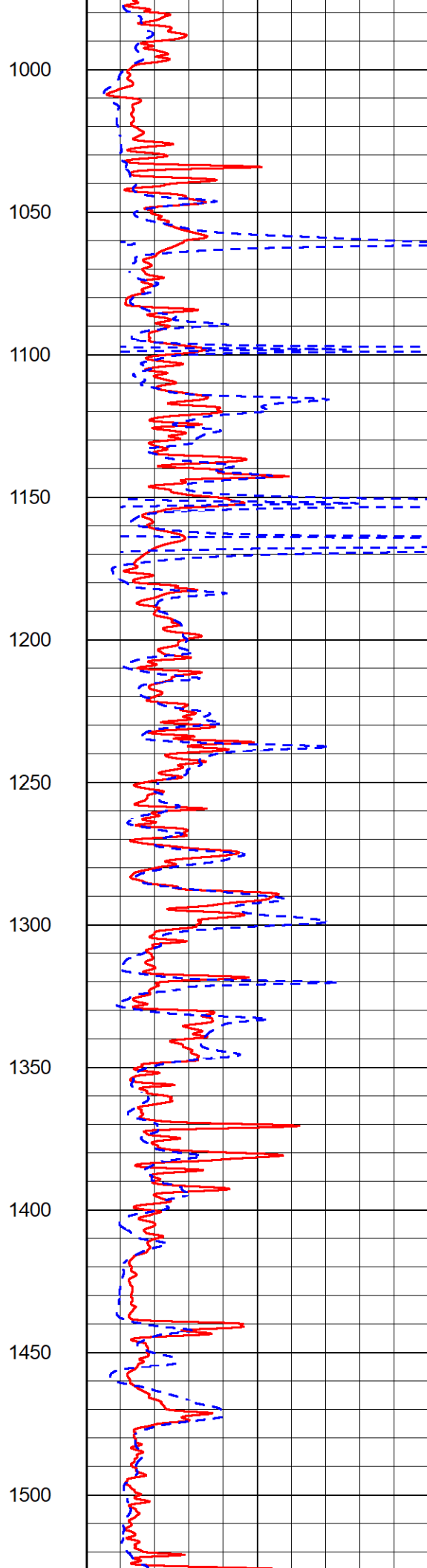
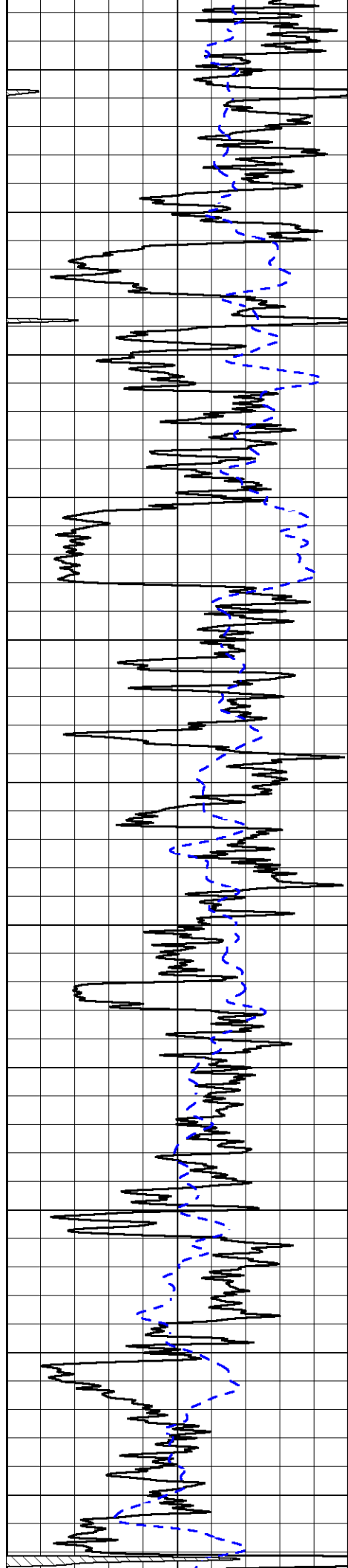
MAIN PASS

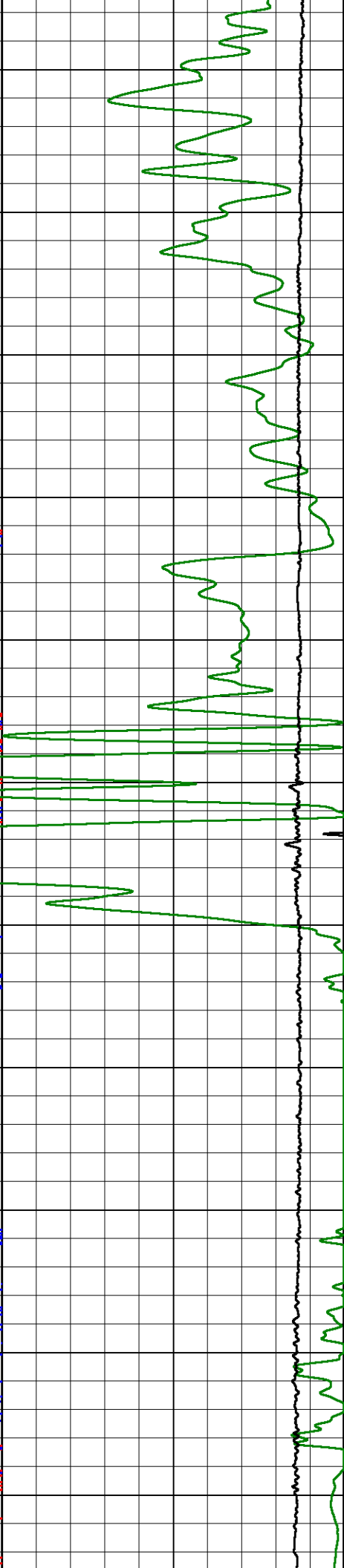
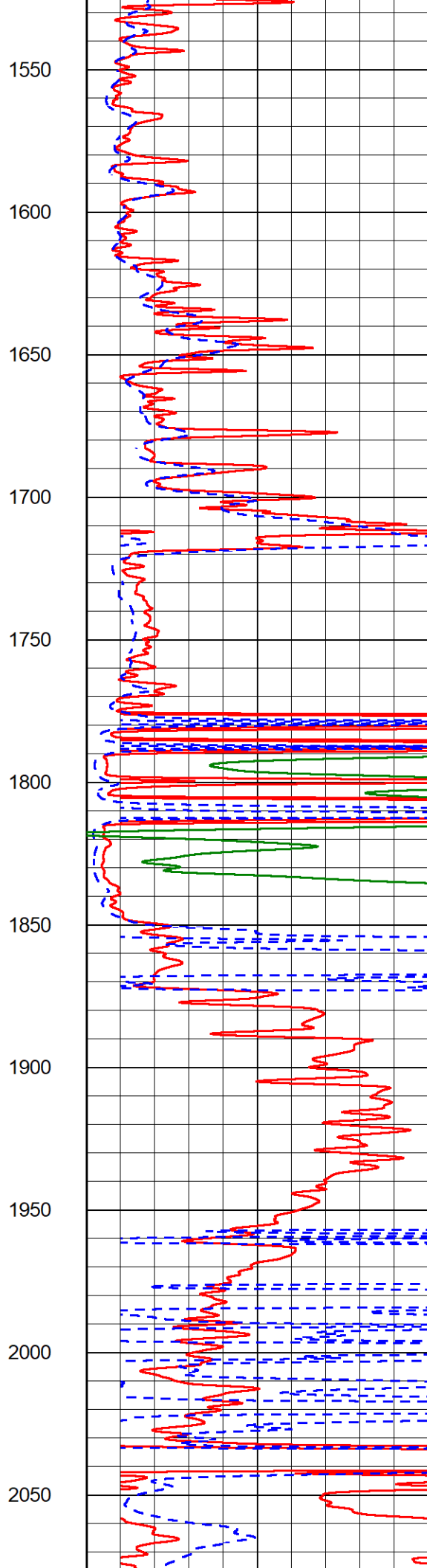
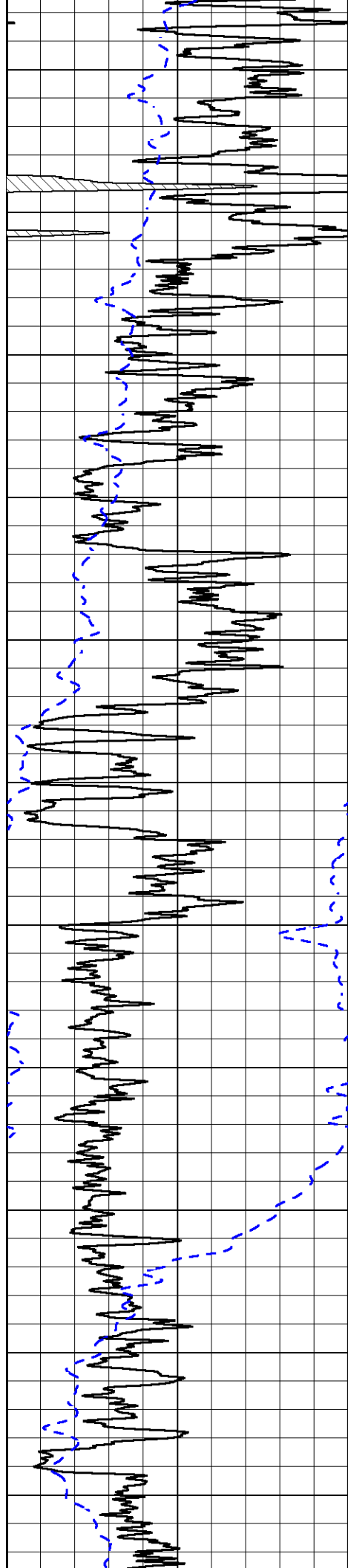
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 Charted by Depth in Feet scaled 1:600

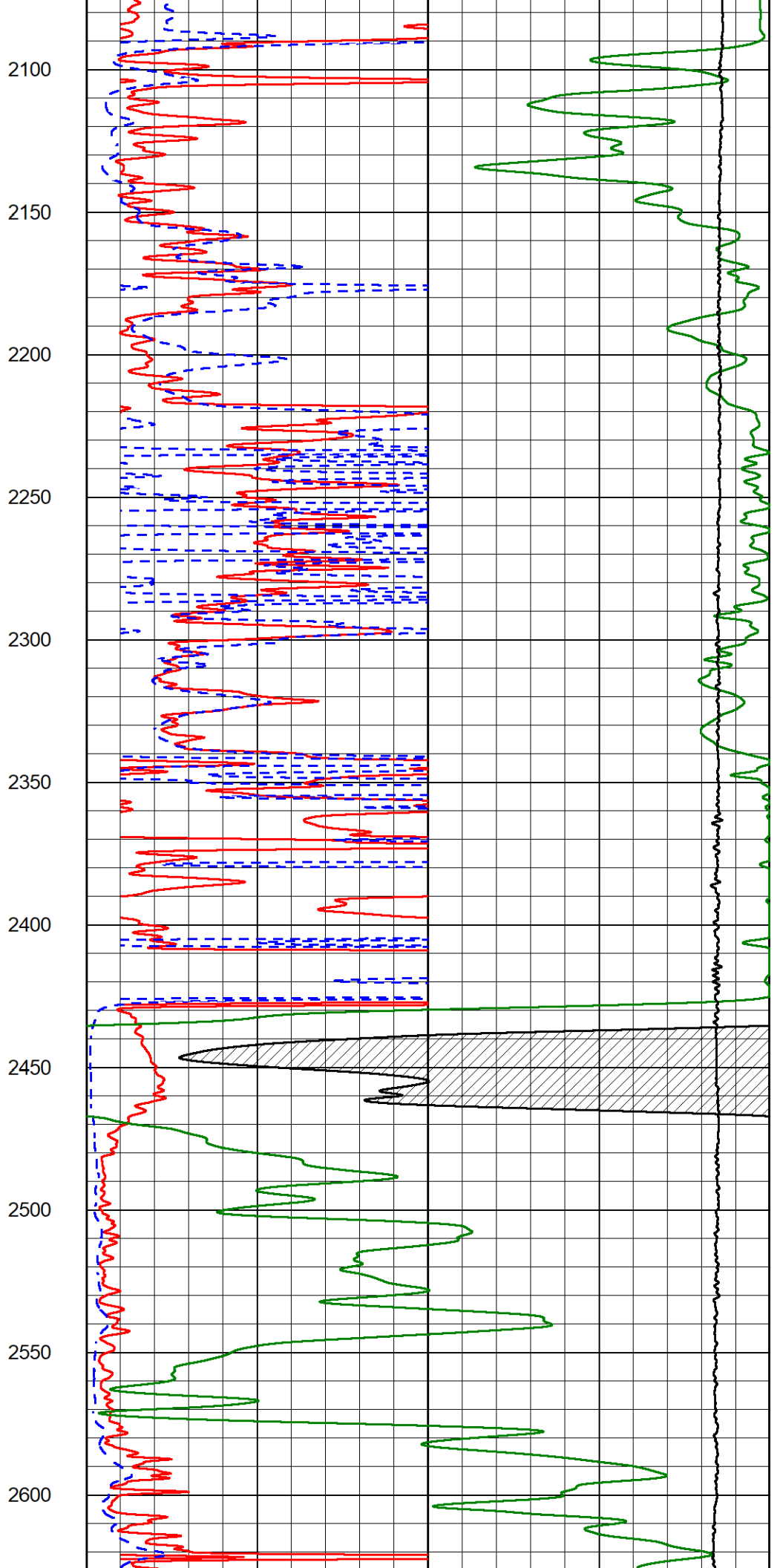
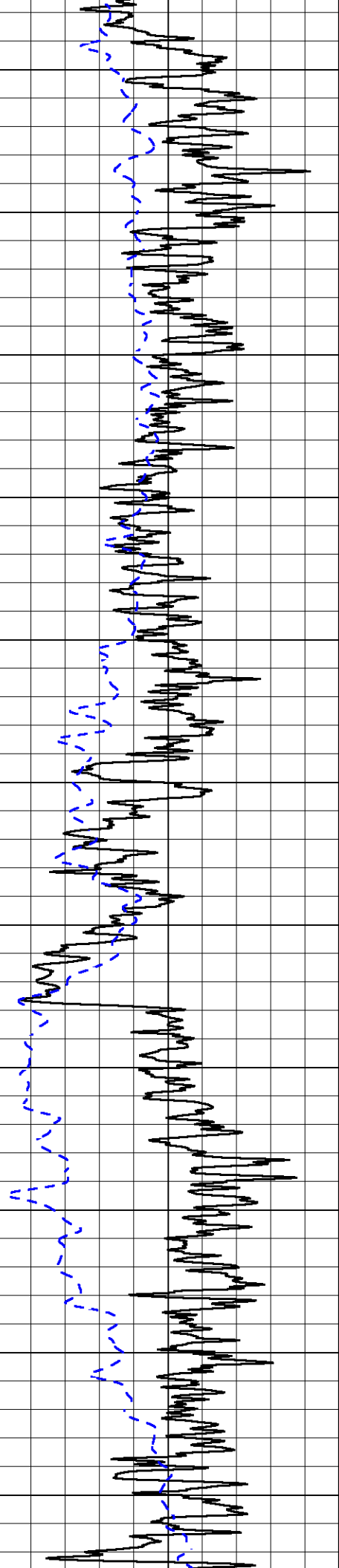
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-200	SP (mV)	0	15000	Line Tension (lb)	0
			0	Shallow Resistivity (Ohm-m)	50
			0	Deep Resistivity (Ohm-m)	50
			Shallow Resistivity		
			50	(Ohm-m)	200
			50	Deep Resistivity (Ohm-m)	200

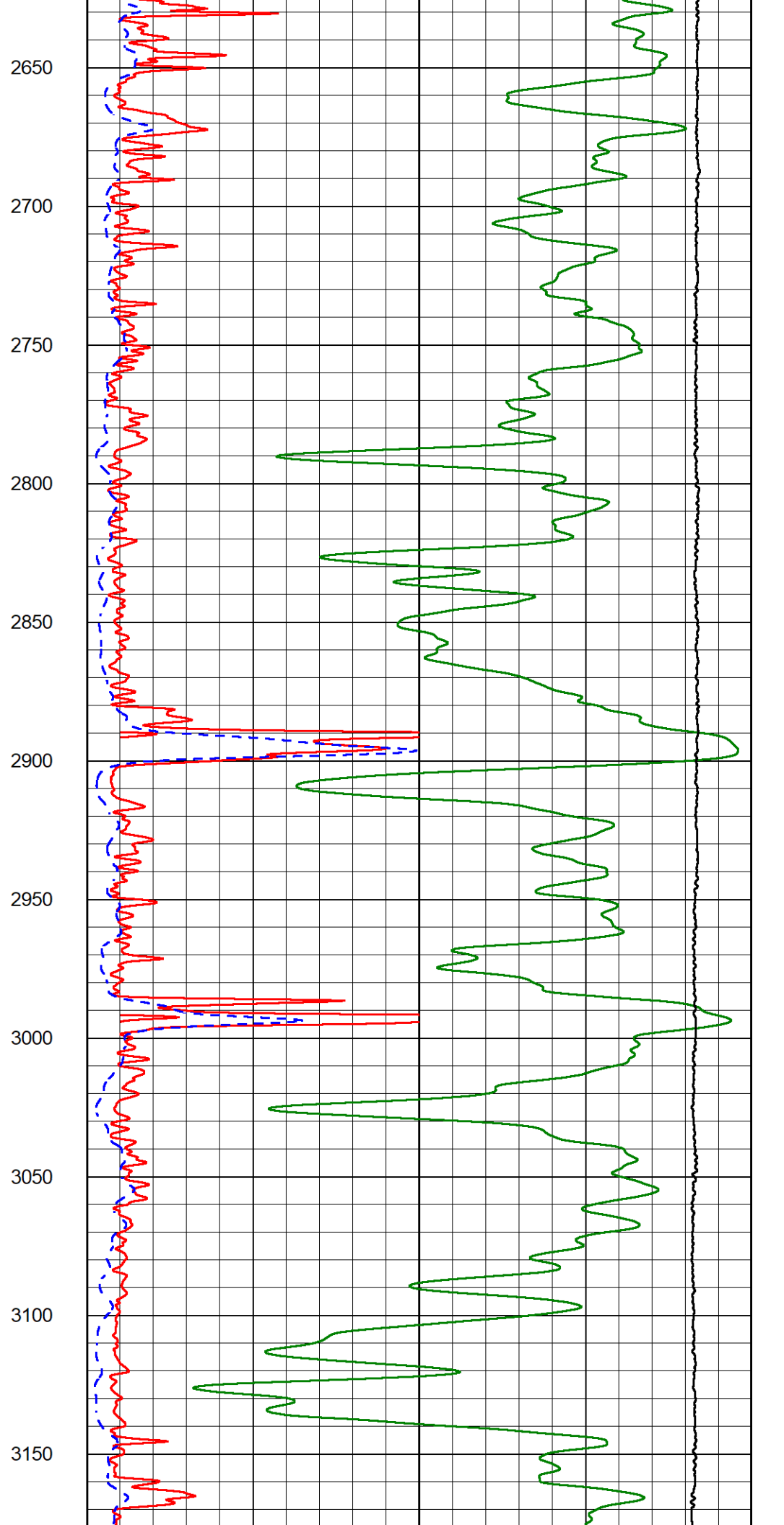
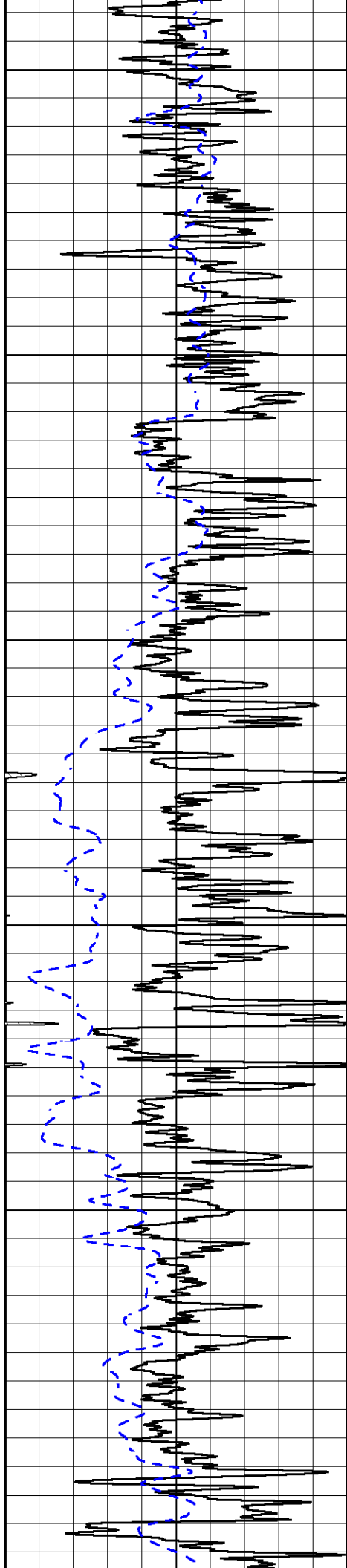


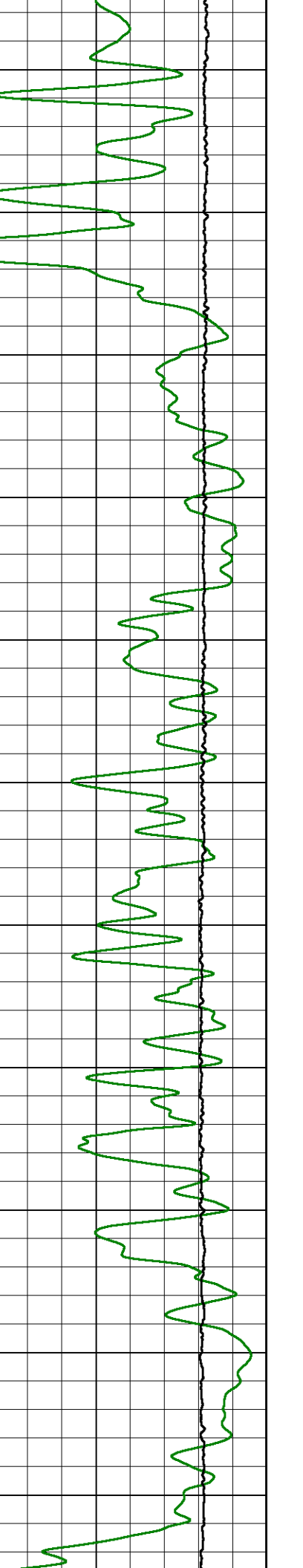
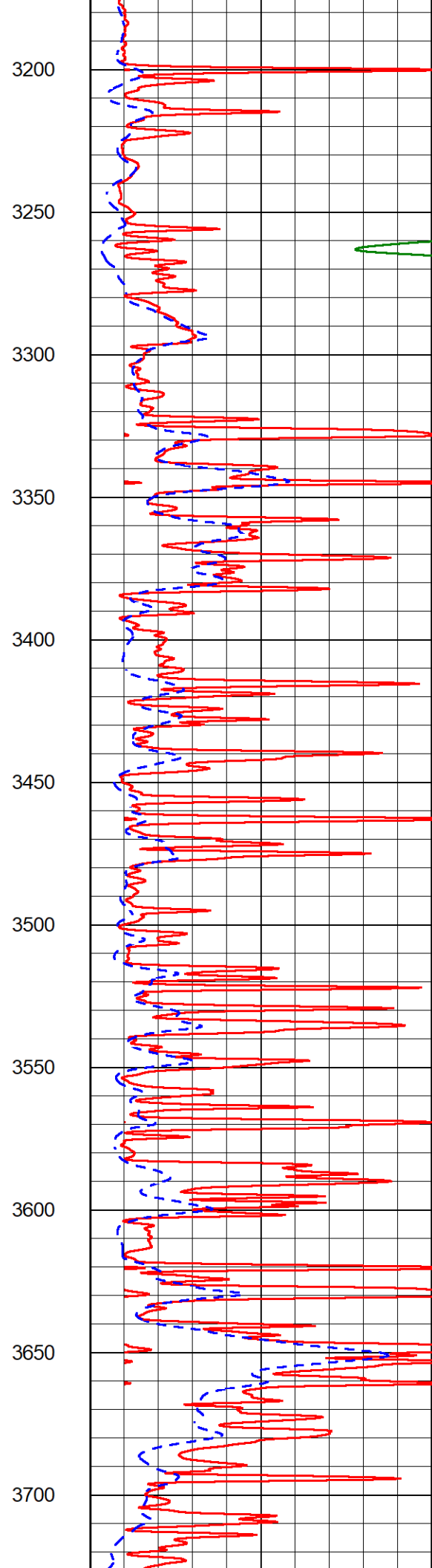
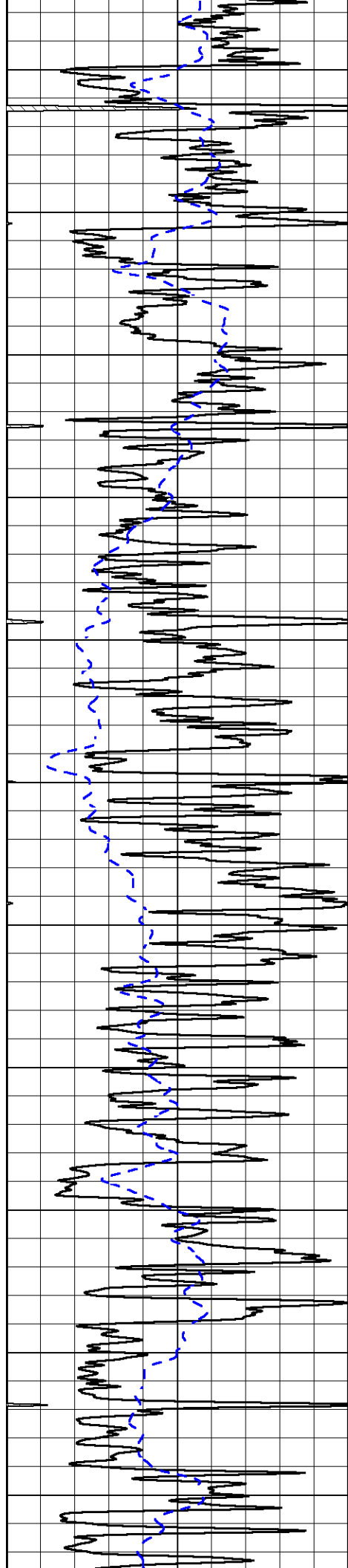


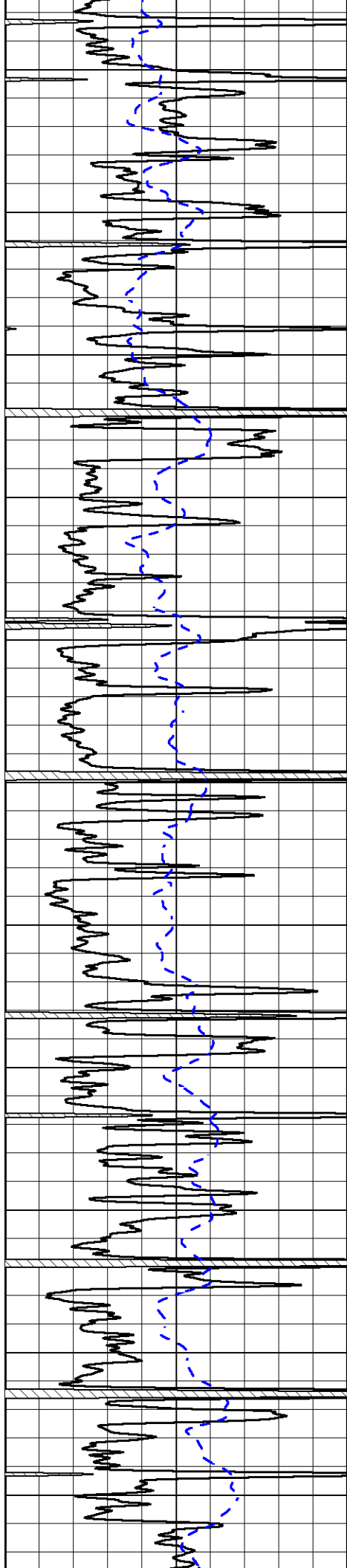












3750

3800

3850

3900

3950

4000

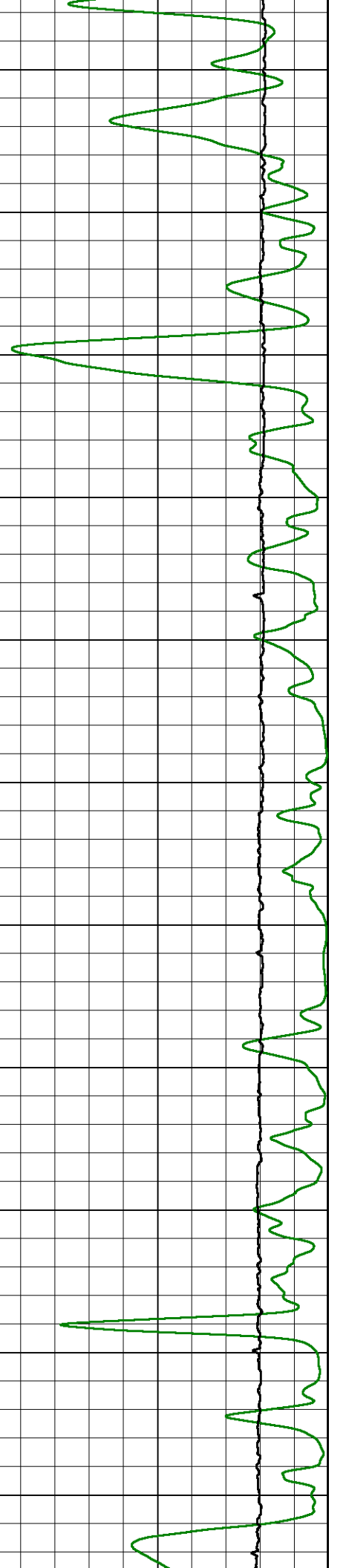
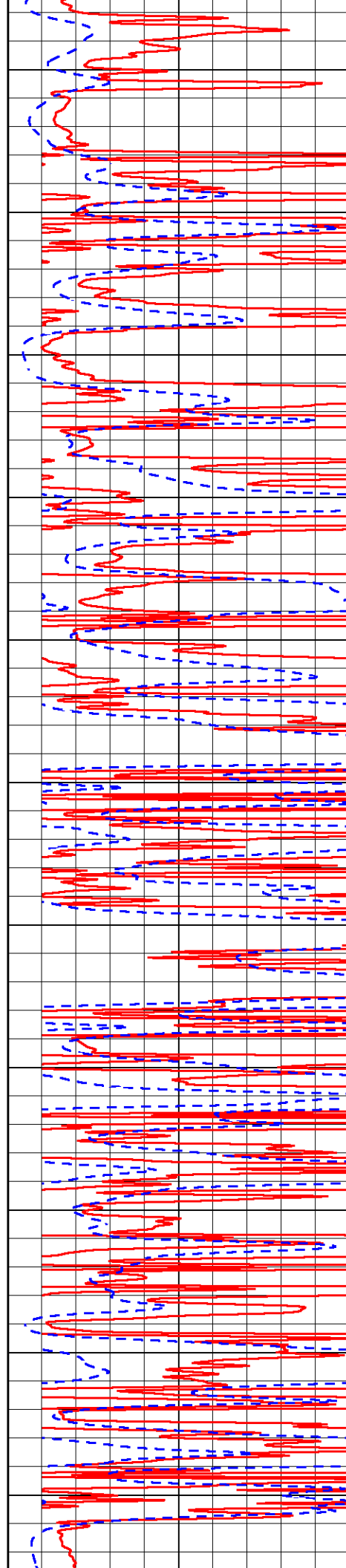
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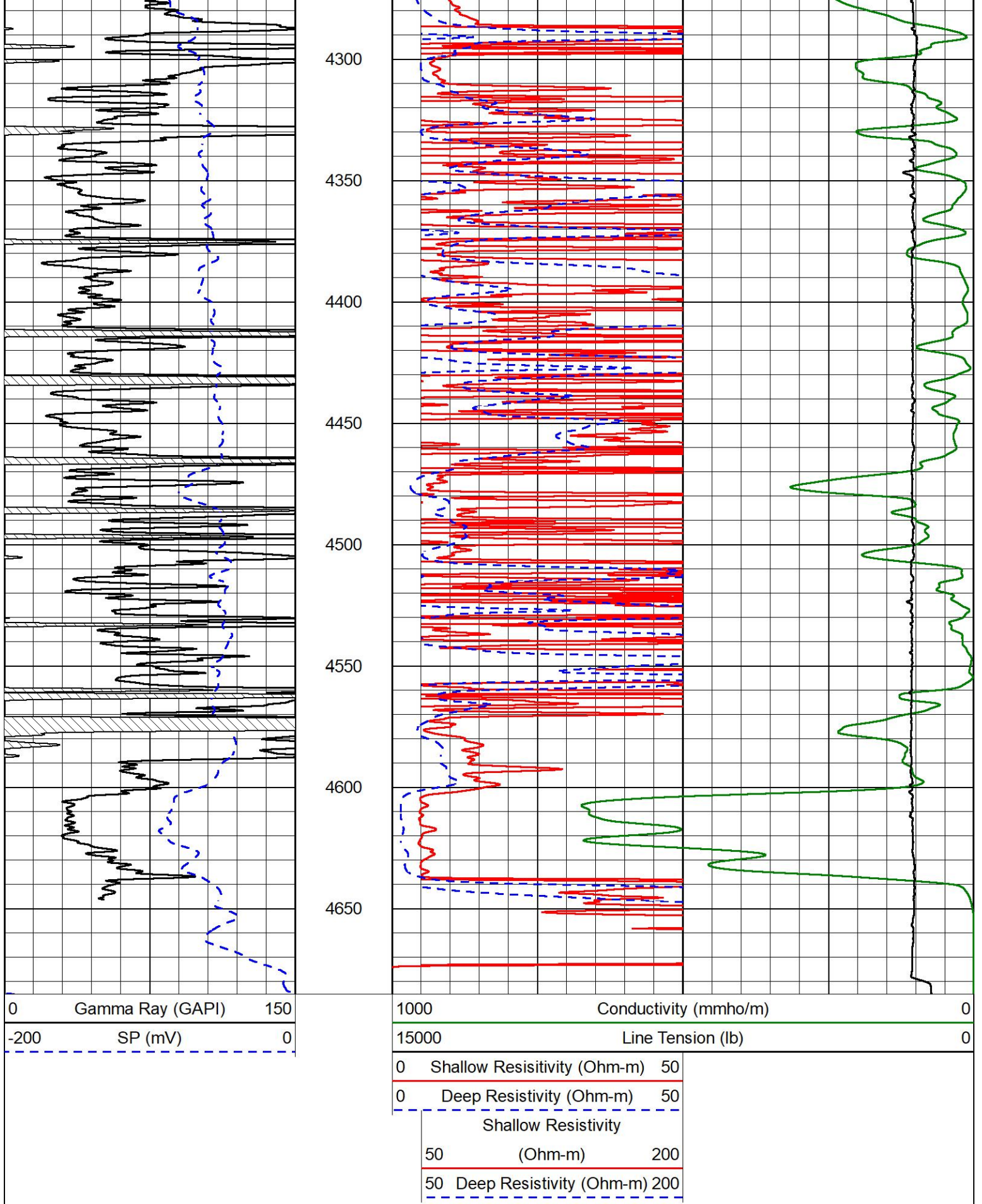
4100

4150

4200

4250





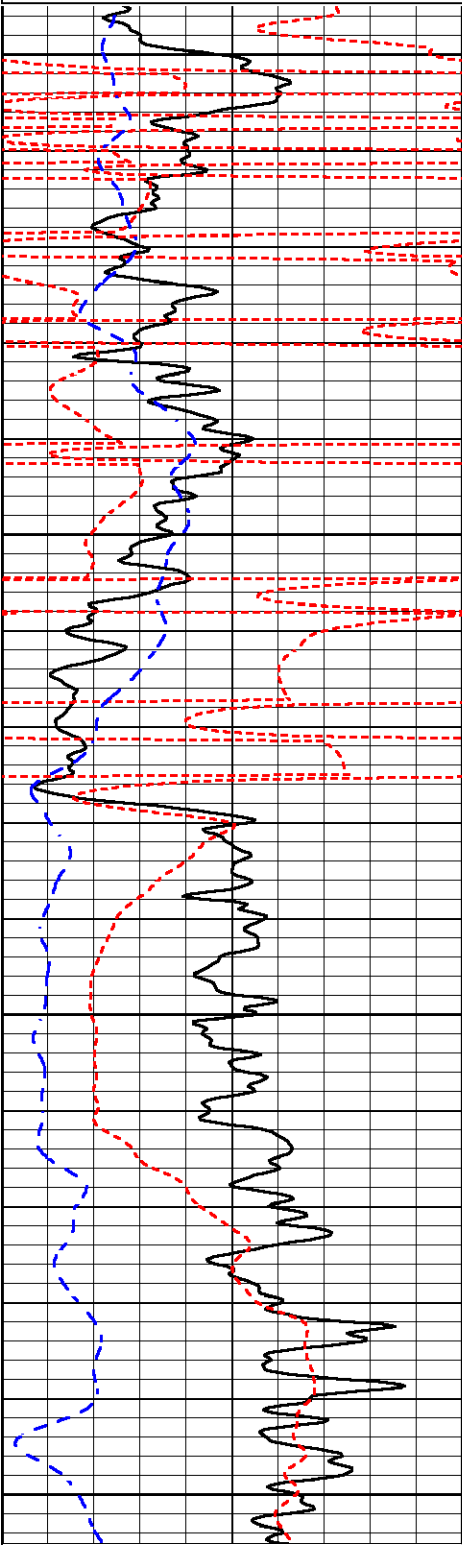
ANHYDRITE SECTION

MAIN PASS

Database File darrah_sangster-up unit 1-13.db
 Dataset Pathname stkml/pass3.4
 Presentation Format _dil
 Dataset Creation Tue Nov 11 02:41:10 2025
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
50	RXORT	250
-200	SP (mV)	0

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0

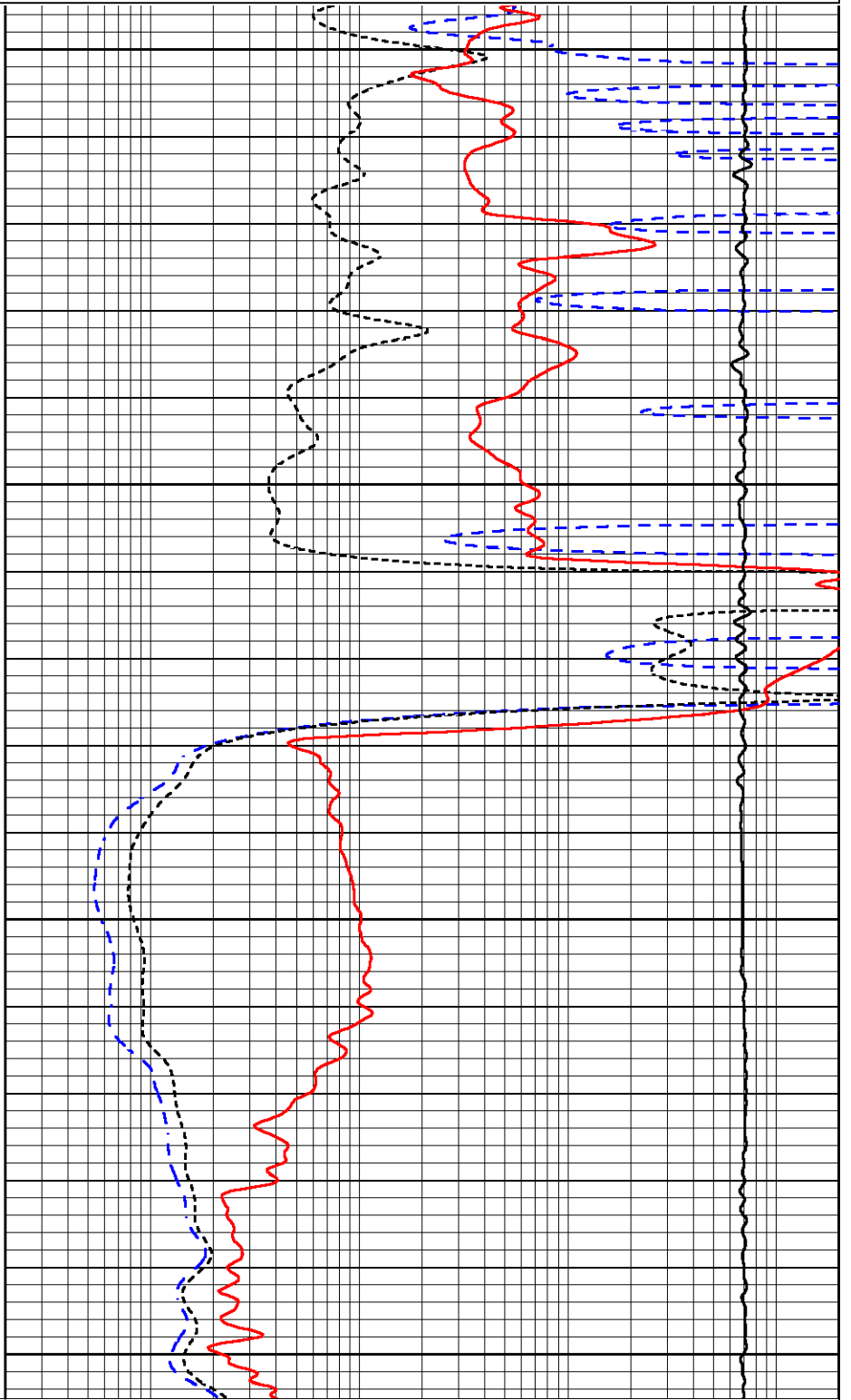


2350

2400

2450

2500



0	Gamma Ray (GAPI)	150
50	RXORT	250
-200	SP (mV)	0

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000



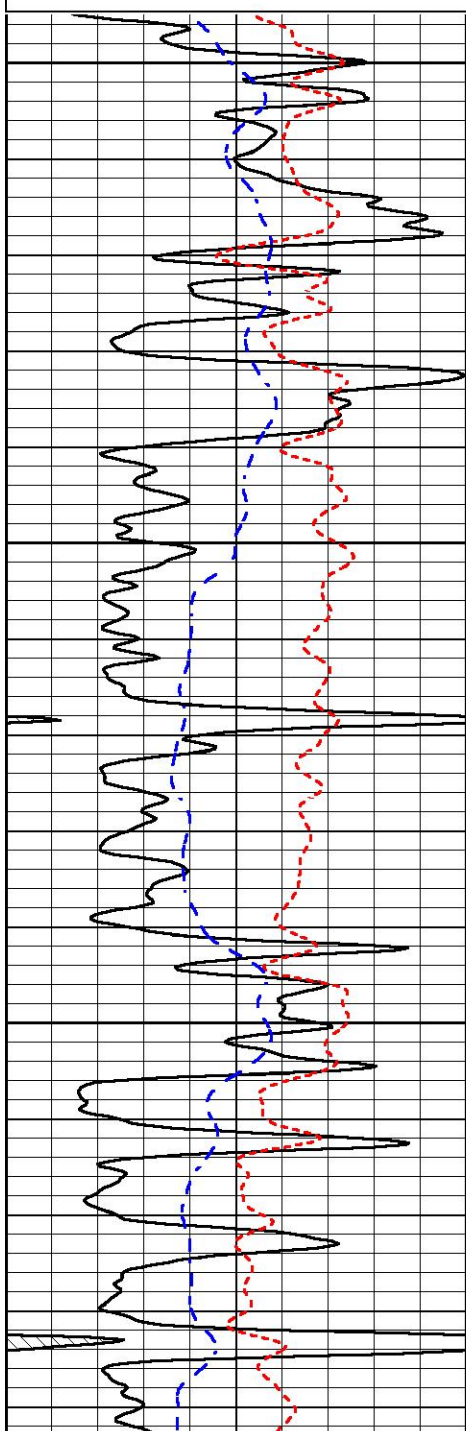
DETAIL SECTION

MAIN PASS

Database File darrah_sangster-up unit 1-13.db
 Dataset Pathname stkml/pass3.1
 Presentation Format _dil
 Dataset Creation Tue Nov 11 02:53:13 2025
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
50	RXORT	250
-200	SP (mV)	0

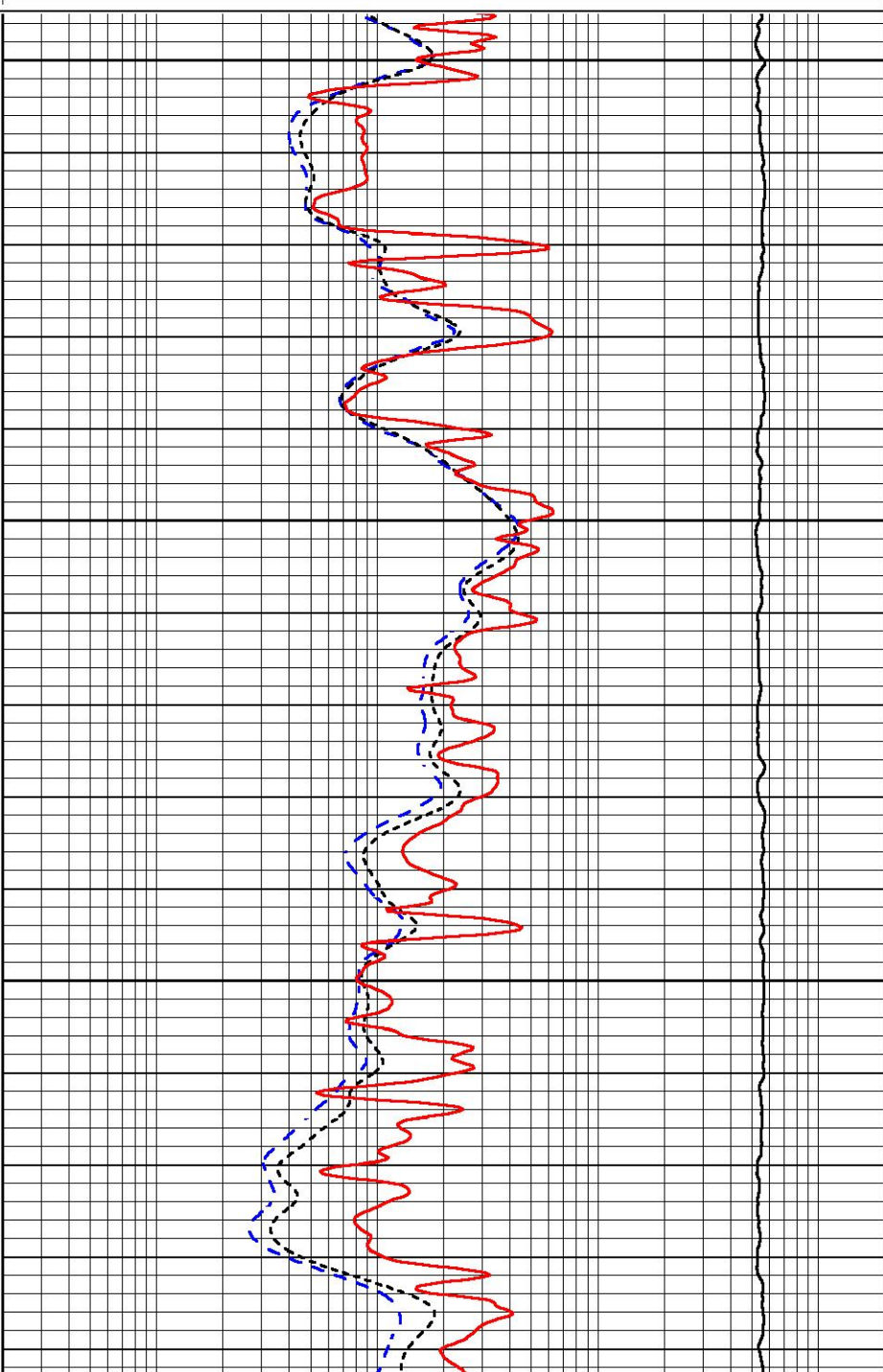
0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0

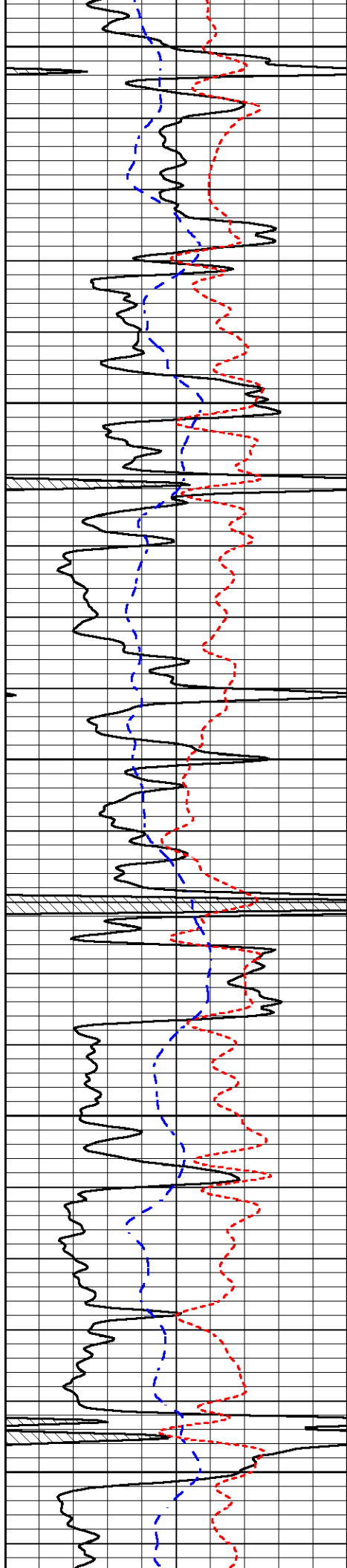


3600

3650

3700





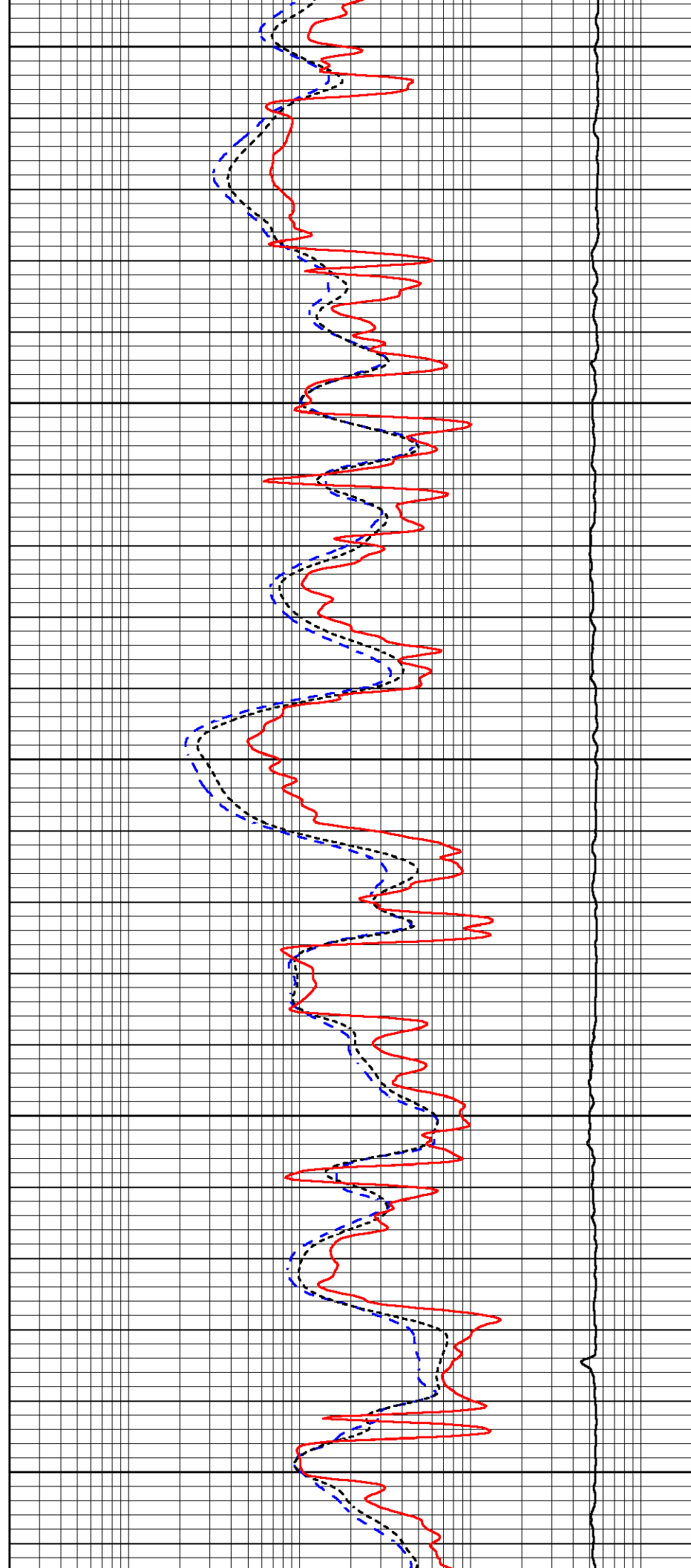
3750

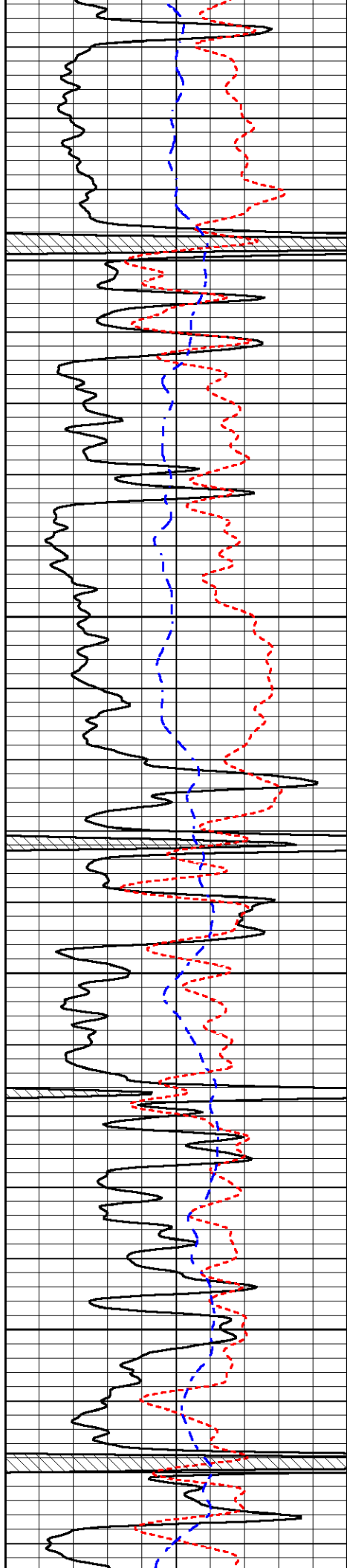
3800

3850

3900

3950



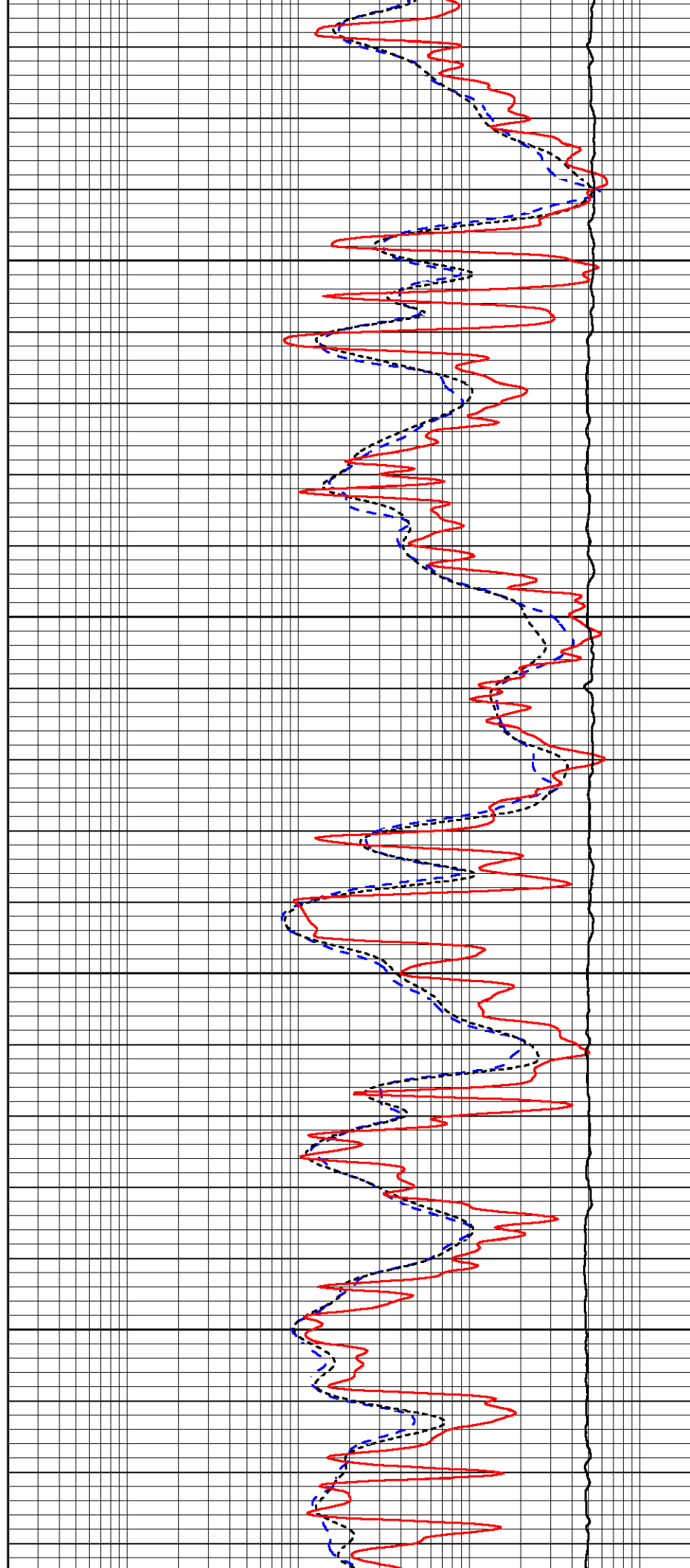


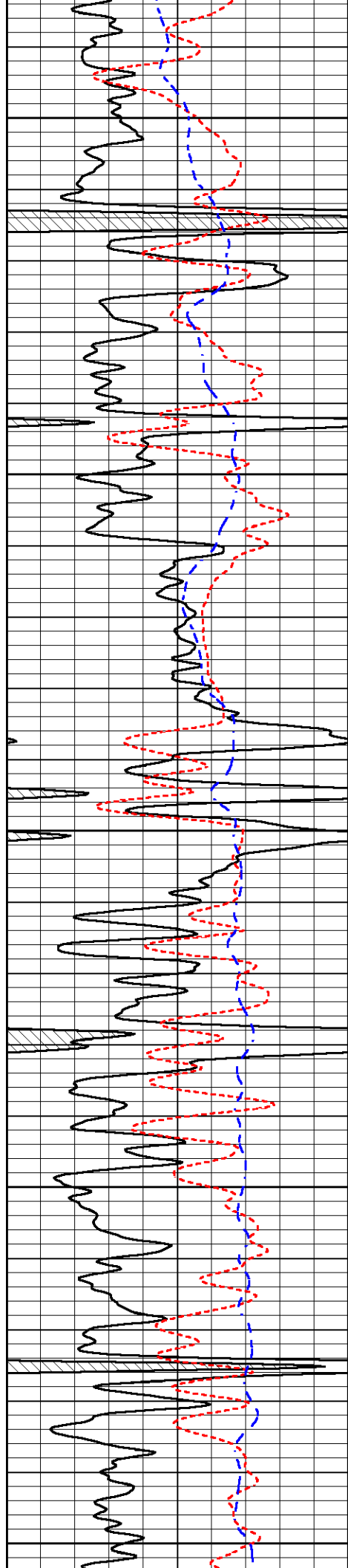
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4050

4100

4150





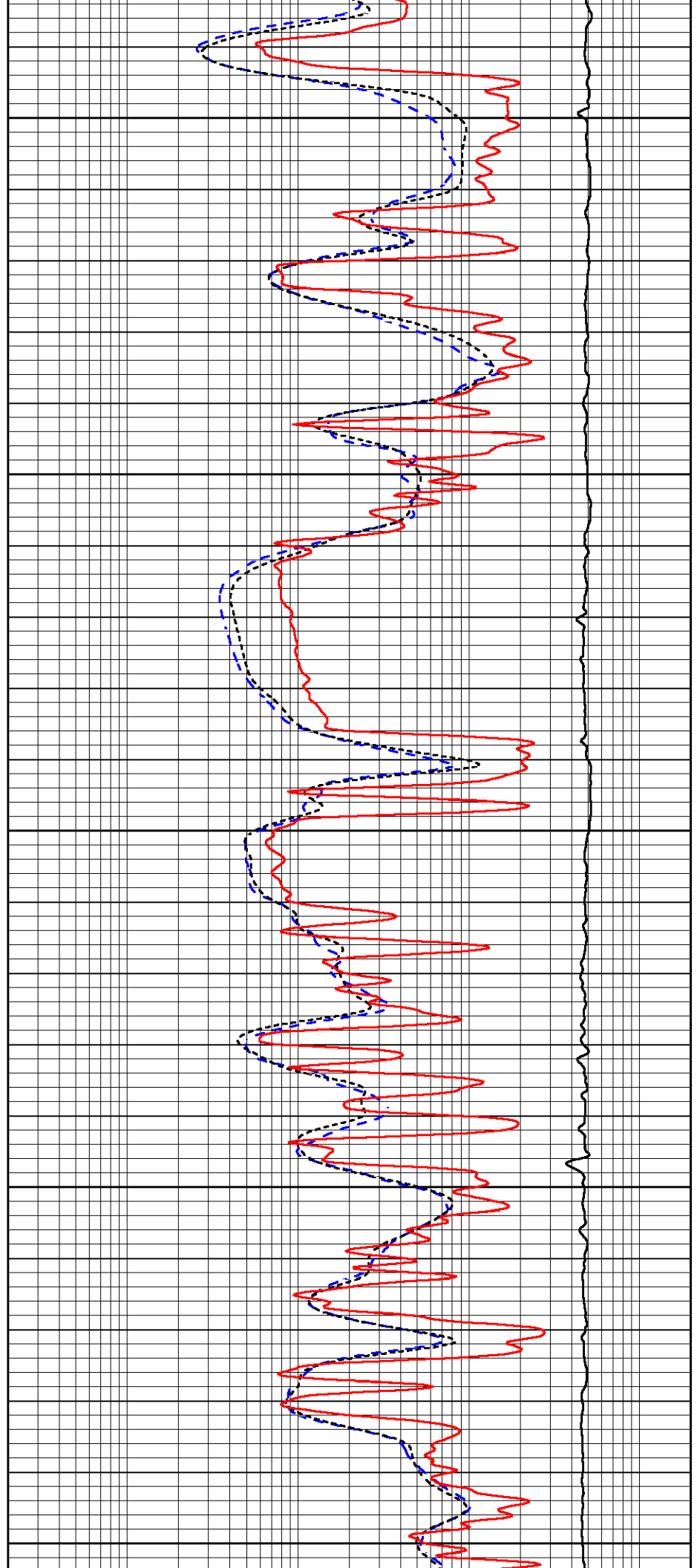
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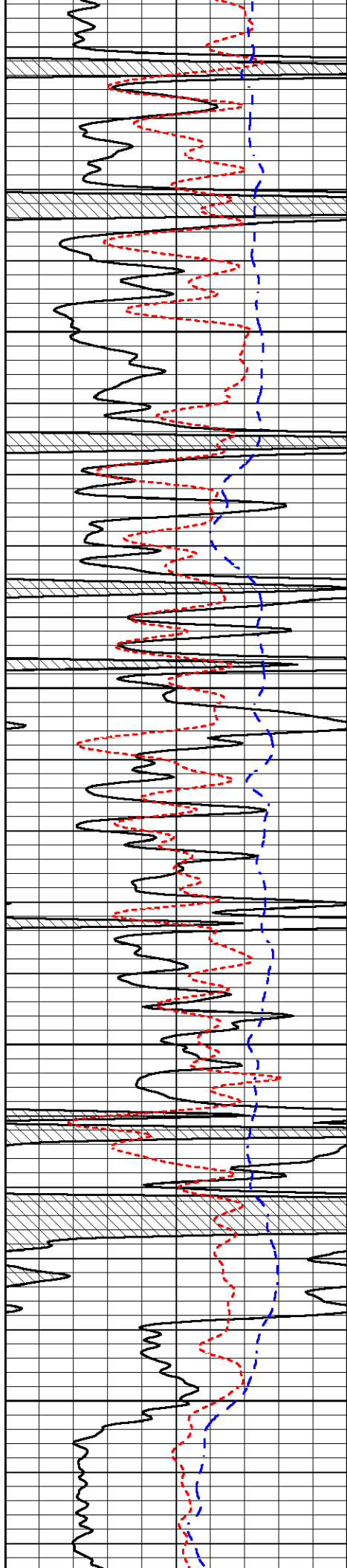
4250

4300

4350

4400



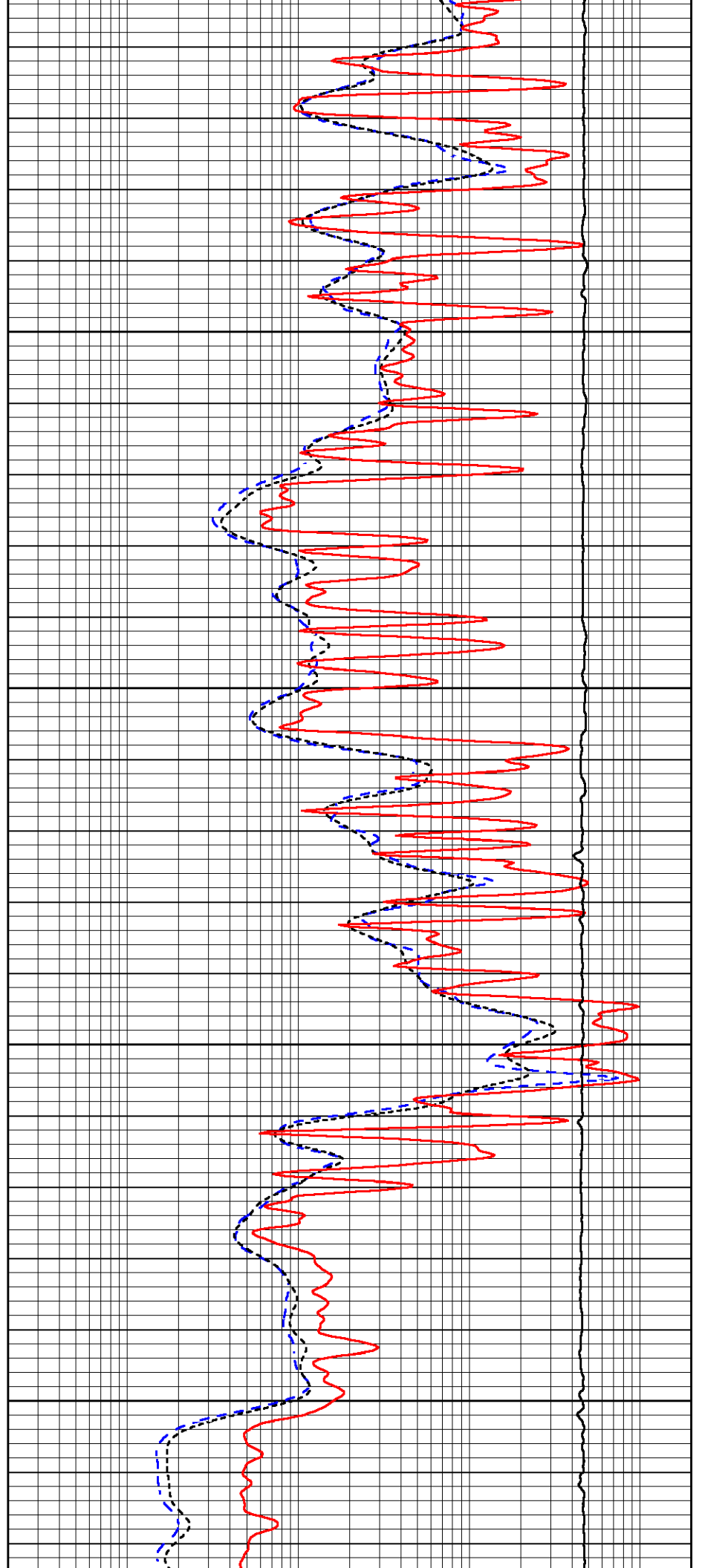


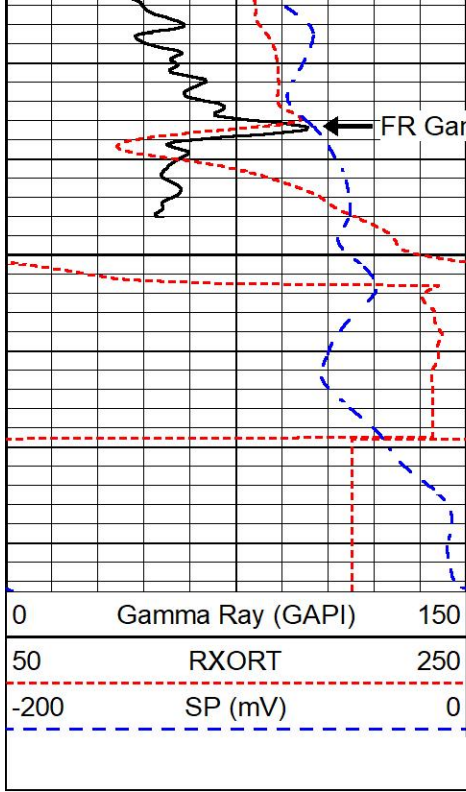
4450

4500

4550

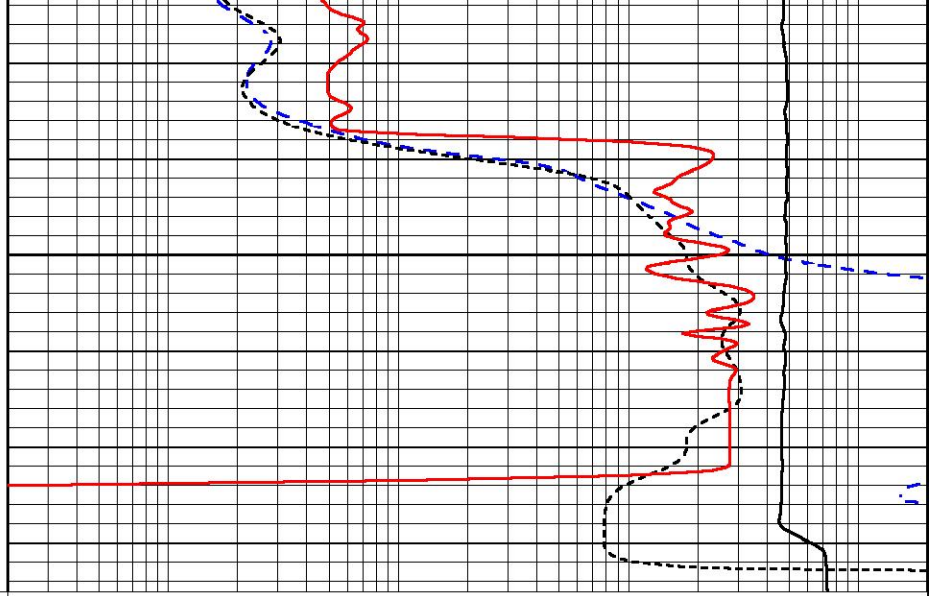
4600





FR Gamma Ray
4650

0	Gamma Ray (GAPI)	150
50	RXORT	250
-200	SP (mV)	0



0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0



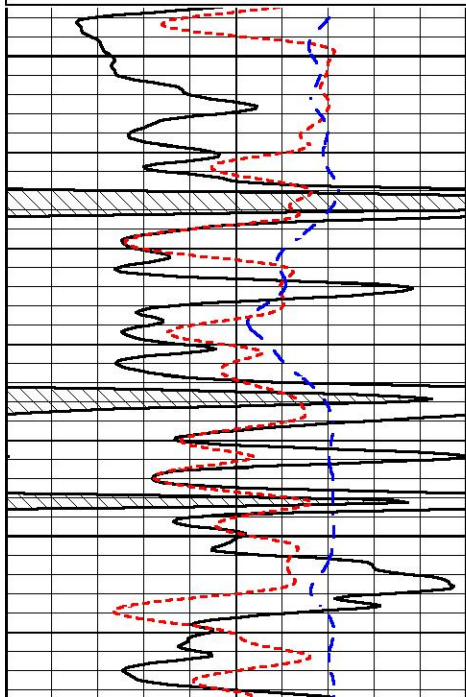
REPEAT SECTION

REPEAT PASS

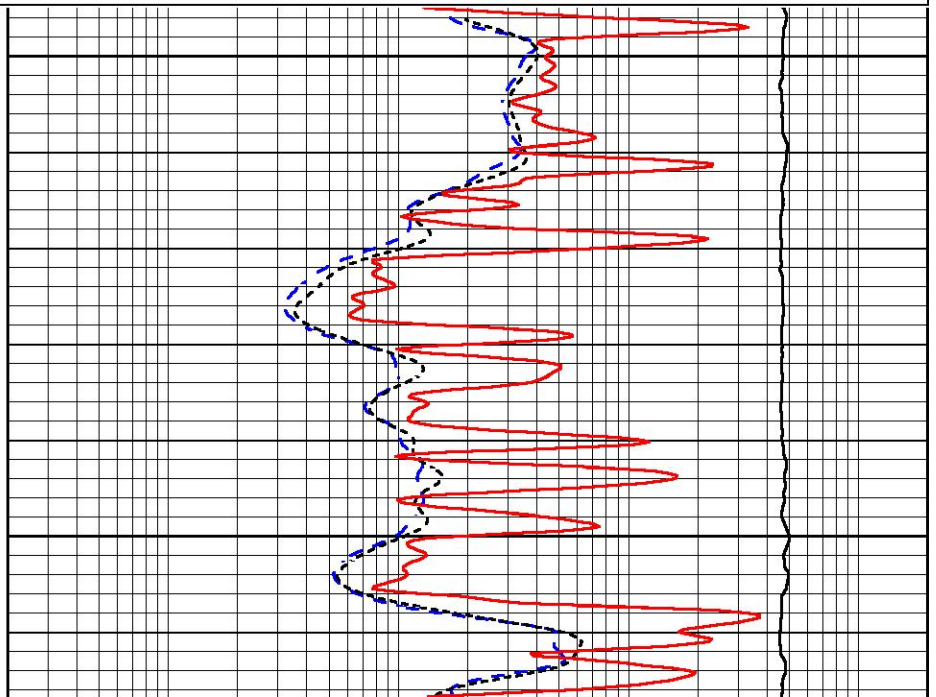
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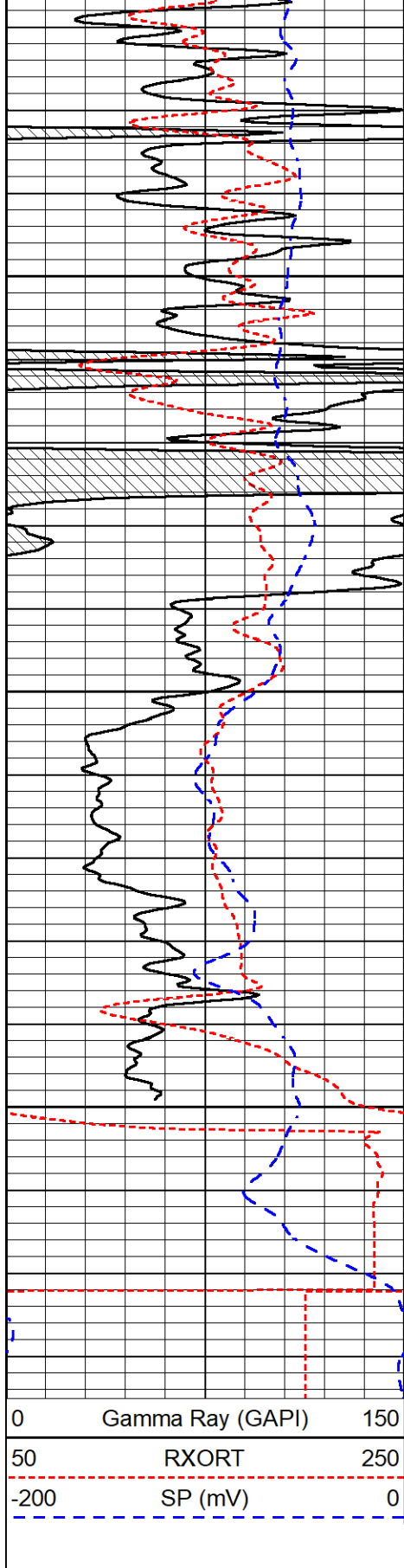
0	Gamma Ray (GAPI)	150
50	RXORT	250
-200	SP (mV)	0

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0



4450
4500

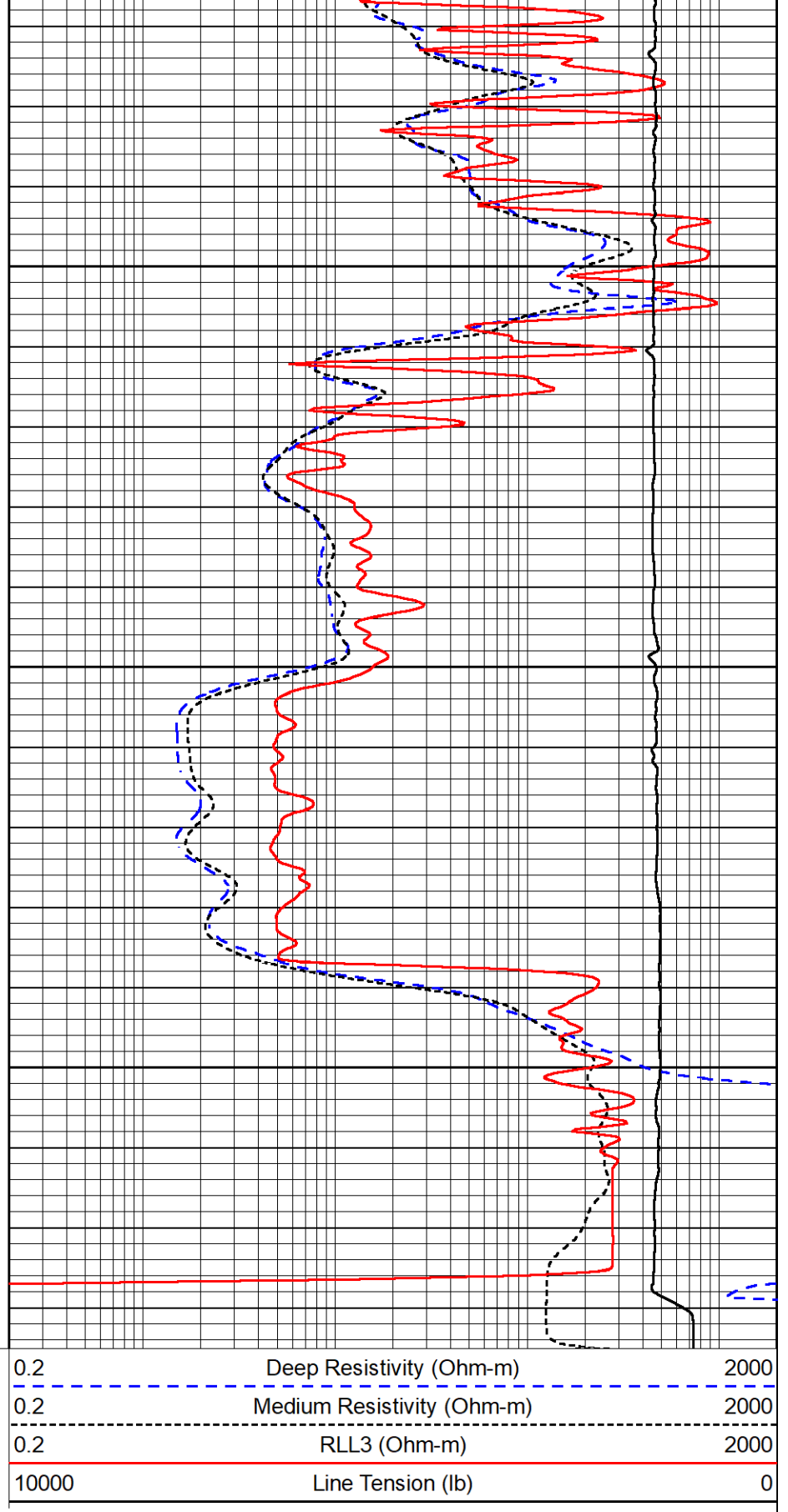




4550

4600

4650



Calibration Report

Database File darrah_sangster-up unit 1-13.db
 Dataset Pathname stkml/pass3.1
 Dataset Creation Tue Nov 11 02:53:13 2025

Dual Induction Calibration Report

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		m	b
Deep	178.615	710.235	0.000	255.800	mmho/m	1.350	-8.000
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.900	-40.000

Microlog Calibration Report

Serial-Model: 402-PSI STKBL ML
Performed: Sat Nov 1 16:03:24 2025

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0037	0.0043	0.0000	10.0000	Ohm-m	18500.0000	-1.0000
Inverse	0.1208	0.0013	0.0000	10.0000	Ohm-m	21500.0000	-0.5000
Caliper	1.0046	1.1419	5.5000	20.0000	in	50.0000	-44.5650

LITHODENSITY Calibration Report

Serial Number: 701-03
Tool Model: STEP LITHO Short
Performed: Tue Sep 23 11:08:22 2025

Source:

	Win1	Win2	Win3	Win4	Win5	Win6	Win7	Win8	
Background:									
SS:	56	59	219	268	24	71	46	1	cps
LS:	78	88	333	431	50	131	87	4	cps
Aluminum:									
SS:	1019	1215	2861	2617	50	77	49	3	cps
LS:	1263	2145	3830	1712	72	136	59	4	cps
Magnesium:									
SS:	1699	1990	4685	3819	56	78	46	4	cps
LS:	4984	8437	15068	6103	123	112	86	24	cps
Aluminum+Iron:									
SS:	655	863	2400	2274	45	78	49	3	cps
LS:	711	1512	3267	1588	59	132	86	6	cps

	Density		PE	
	Actual	Calibrated	Actual	Calibrated Quality
Background:				
SS:				0.213
LS:				0.202
Aluminum:				
SS:	2.6000	2.6000		0.219
LS:	2.6000	2.6000		0.395
Magnesium:				
SS:	1.6800	1.6800	g/cc	2.5700 2.5700 0.255
LS:	1.6800	1.6800	g/cc	2.5700 2.5700 0.131
Aluminum+Iron:				
SS:				6.1800 0.229
LS:				6.1800 0.212

Caliper:	Reference:	Reading:
Small Ring:	6.0 in	0.2
Large Ring:	17.5 in	0.8
Gain:	18.284	

Offset:

0.100

Compensated Neutron Calibration Report

Serial Number: 210
Tool Model: M&W

CALIBRATION

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: 105
 Tool Model: M&W
 Performed: Tue Aug 26 12:59:12 2025

Calibrator Value: 500.0 GAPI

Background Reading: 24.0 cps
 Calibrator Reading: 637.0 cps

Sensitivity: 0.6000 GAPI/cps



Company Darrah Oil Company, LLC
 Well Sangster-UP Unit #1-13
 Field SHS
 County Logan
 State Kansas