



DUAL INDUCTION LOG

Company	Patterson Energy	Company	Patterson Energy
Well	Stahl #2-30	Well	Stahl #2-30
Field	Gick	Field	Gick
County	Rooks	County	Rooks
State	Kansas	State	Kansas
Location:		API #: 15 163 24392	
330' FNL & 2310' FEL		ML CDNL	
Permanent Datum	Ground Level	Elevation	2144'
Log Measured From	KB 5' AGL		
Drilling Measured From	KB		
SEC 30 TWP 9S RGE 19W		Other Services	
		Elevation	
		K.B. 2149'	
		D.F. 2148'	
		G.L. 2144'	
Date	05/20/19		
Run Number	One		
Depth Driller	3700'		
Depth Logger	3693'		
Bottom Logged Interval	3691'		
Top Log Interval	210'		
Casing Driller	8 5/8" @ 225'		
Casing Logger	225'		
Bit Size	7 7/8"		
Type Fluid in Hole	Chemical	Chlorides 3000 PPM	
Density / Viscosity	8.7/54		
pH / Fluid Loss	10.6/7.8		
Source of Sample	Pit		
Rm @ Meas. Temp	1.9@70degf		
Rmf @ Meas. Temp	1.4@70degf		
Rmc @ Meas. Temp	2.3@70degf		
Source of Rmf / Rmc	Calculated		
Rm @ BHT	1.3@103degf		
Time Circulation Stopped	2:00 p.m		
Time Logger on Bottom	4:37 p.m		
Maximum Recorded Temperature	103degf		
Equipment Number	T-605		
Location	Hays, KS.		
Recorded By	Casey Patterson		
Witnessed By	Mr. Austin Klaus		

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, 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. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

West of Zurich, KS 2 mi to 8 Rd, Then 1 mi. North on 8 Rd. to W Rd.
Then West on W Rd for 1/2 mi ,South Into Location

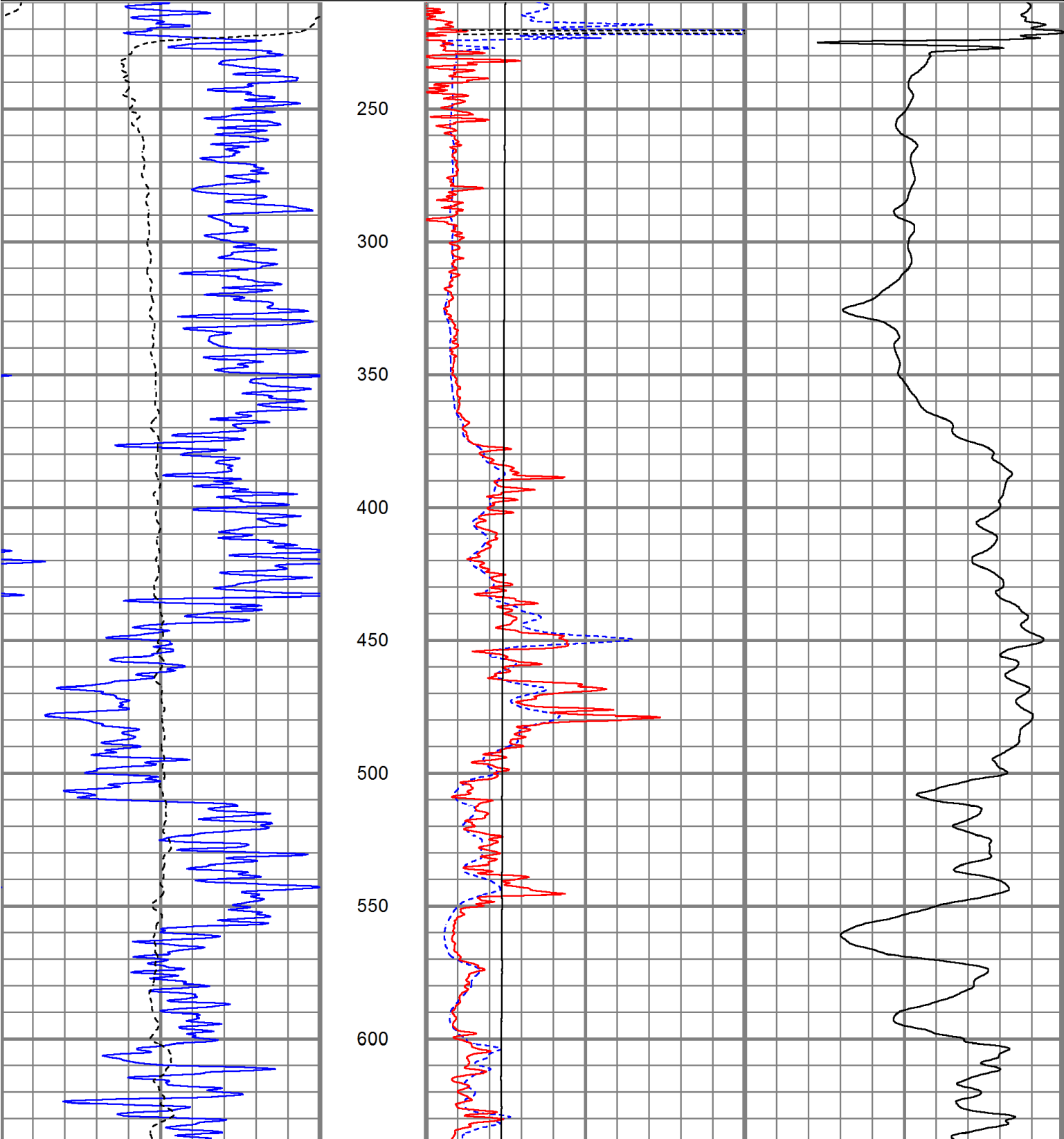
Thanks for using Gemini Wireline LLC
785-625-1182

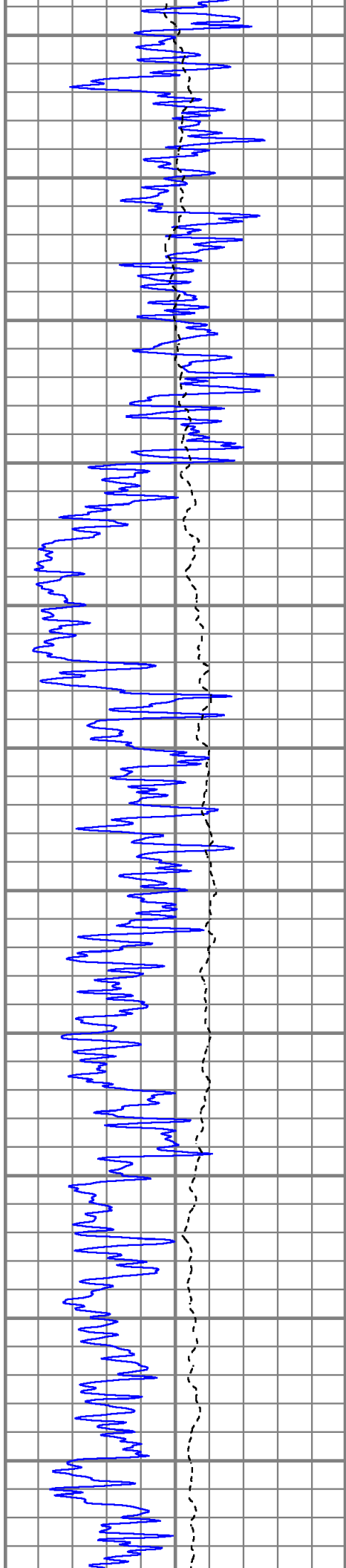


MAIN PASS

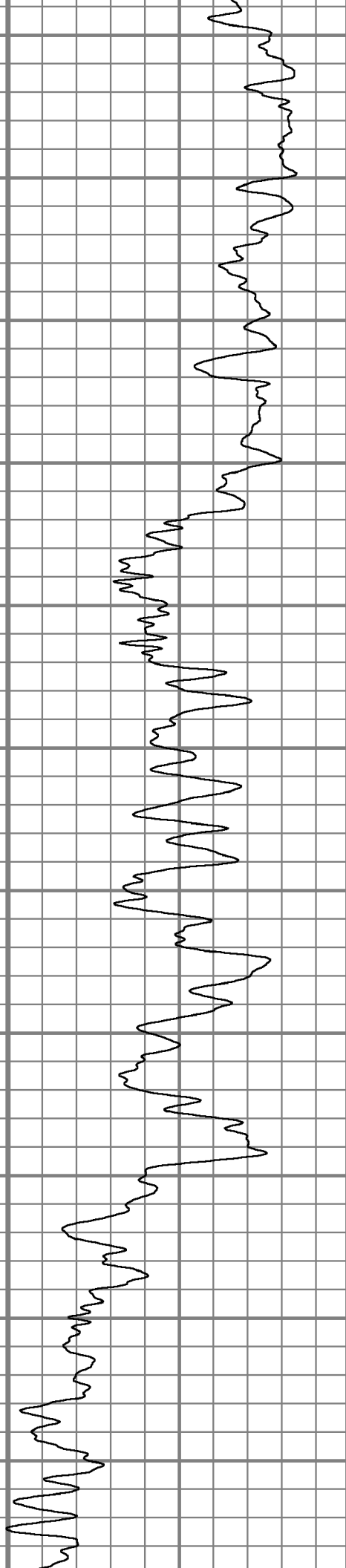
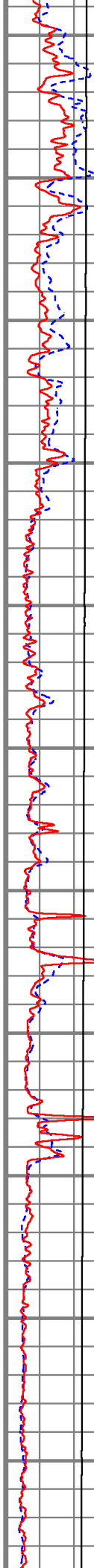
Database File	pestahl#2-30oh.db
Dataset Pathname	pass2
Presentation Format	kdillinn
Dataset Creation	Tue May 21 16:51:02 2019
Charted by	Depth in Feet scaled 1:600

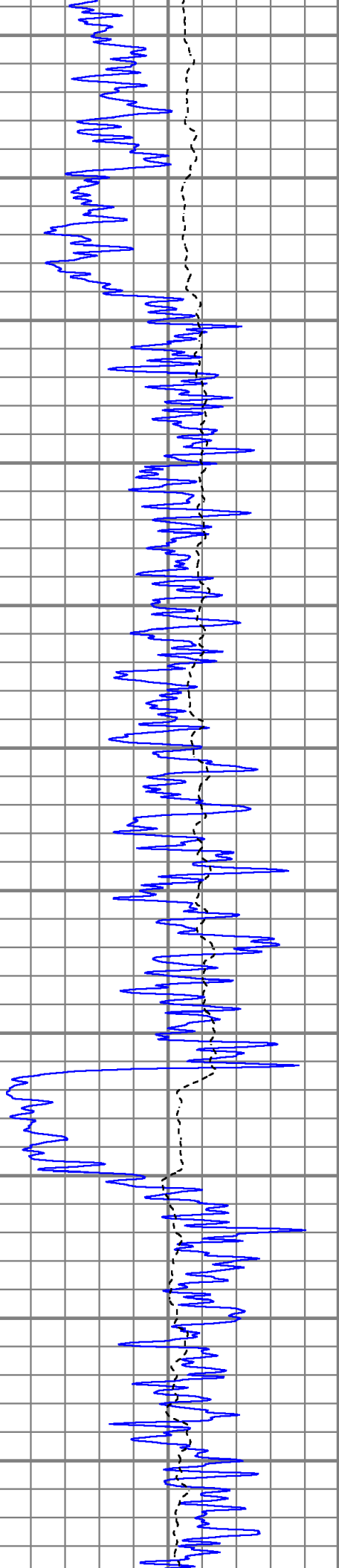
0	GR (GAPI)	150	1000	CILD (mmho/m)	0
-100	SP (mV)	100	10000	LTEN (lb)	0
0	RILD (Ohm-m)	50			
0	RLL3 (Ohm-m)	50			
50	RILD x 10 (Ohm-m)	500			
50	RLL3 x 10 (Ohm-m)	500			





650
700
750
800
850
900
950
1000
1050
1100
1150





1200

1250

1300

1350

1400

1450

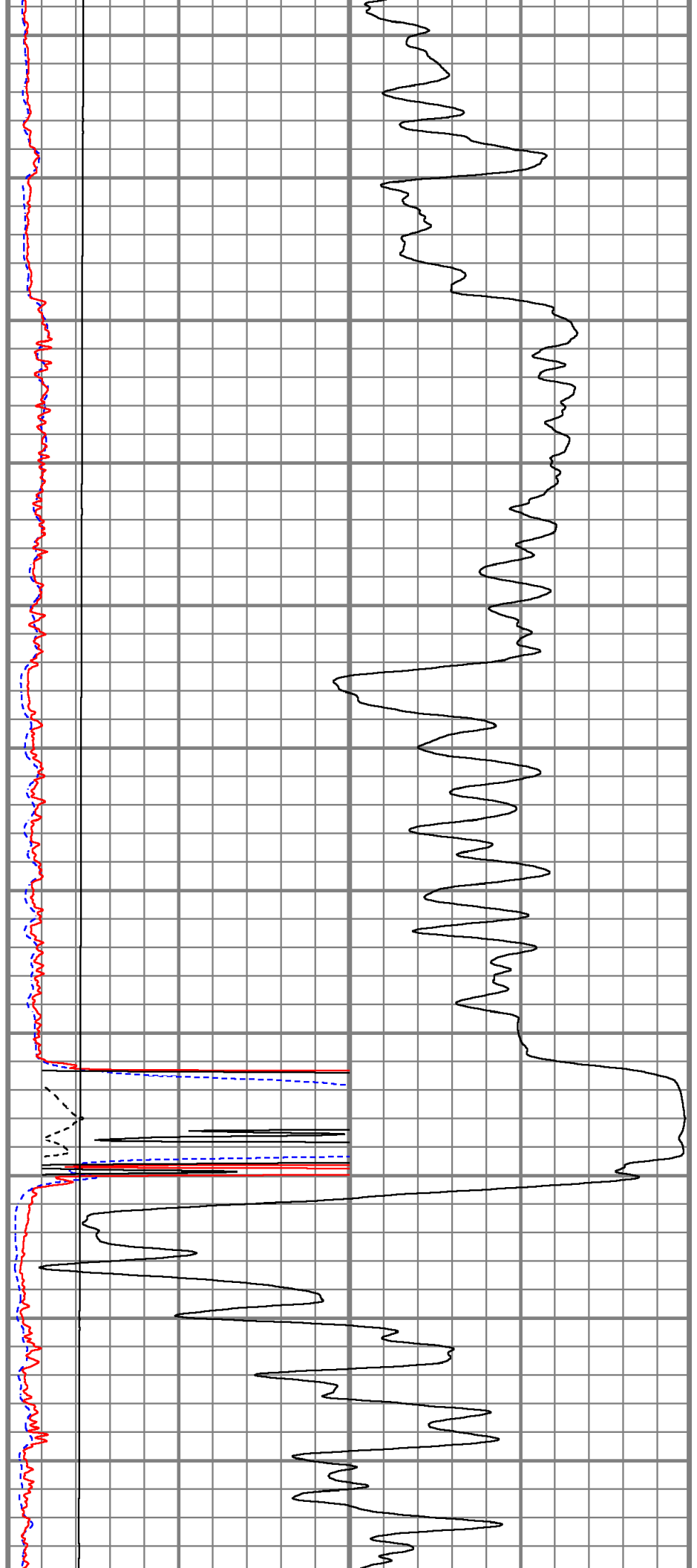
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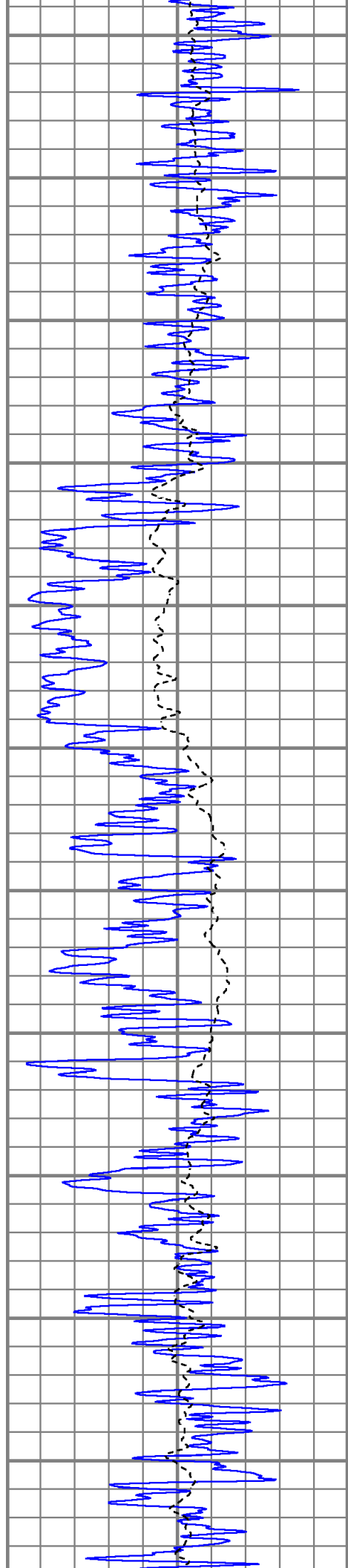
1550

1600

1650

1700





1750

1800

1850

1900

1950

2000

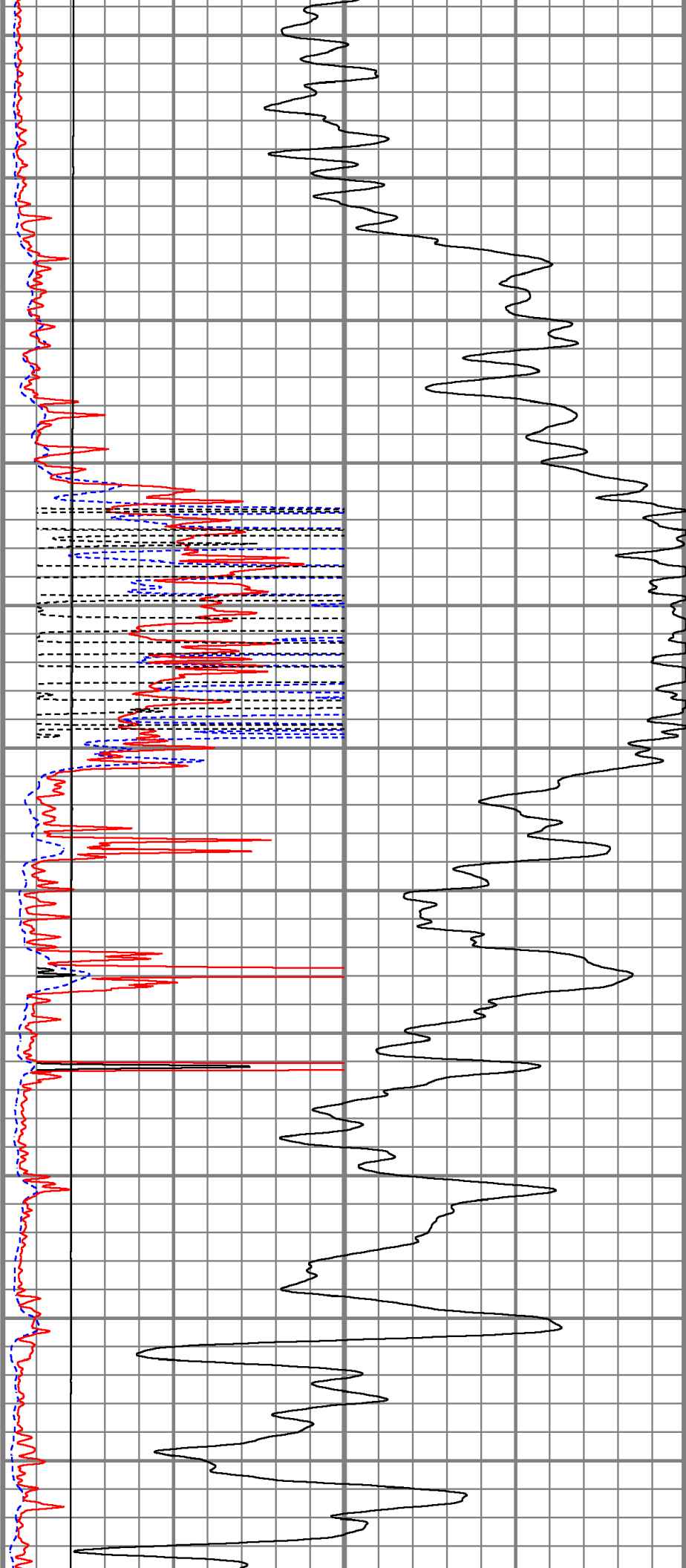
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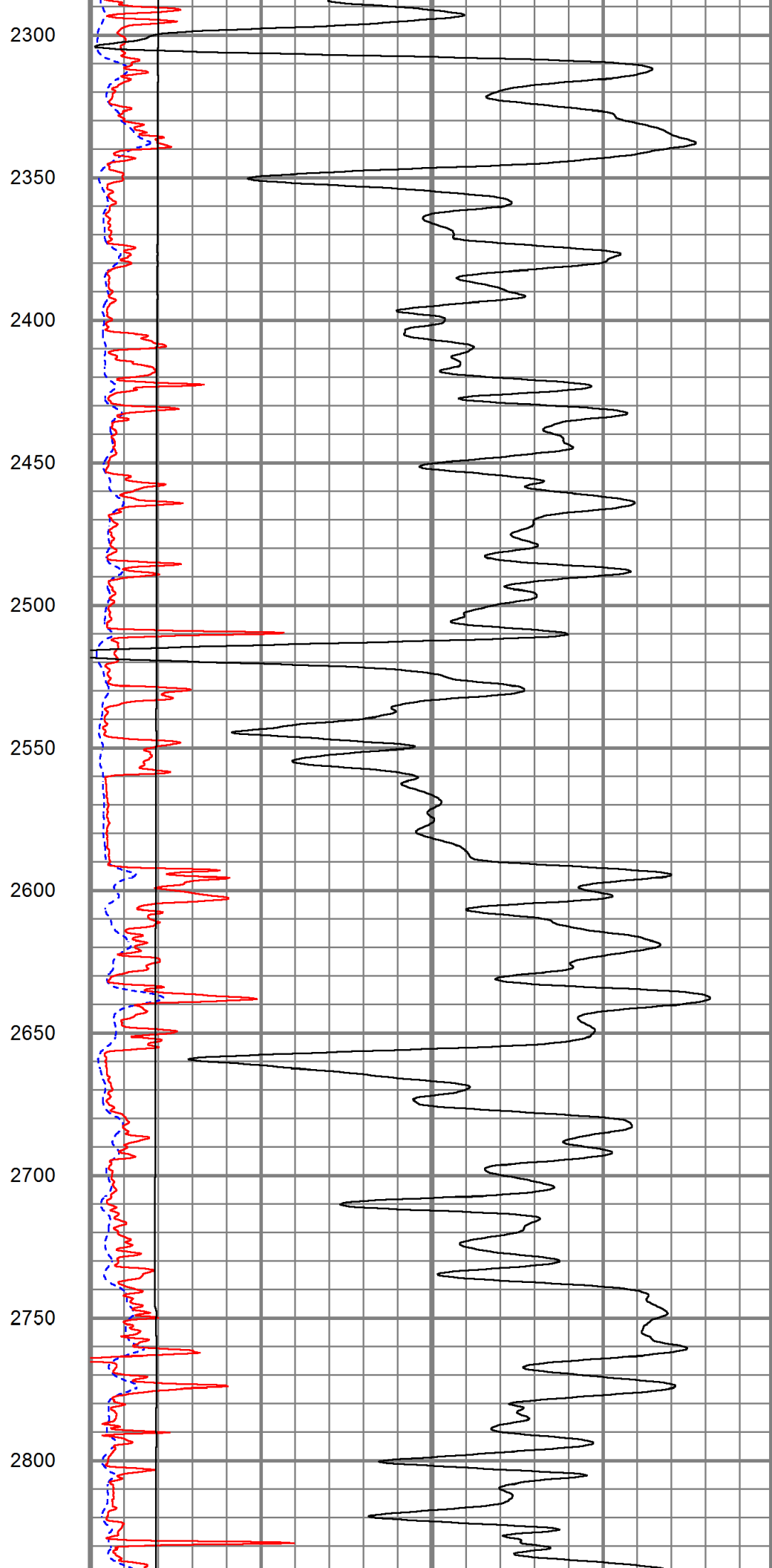
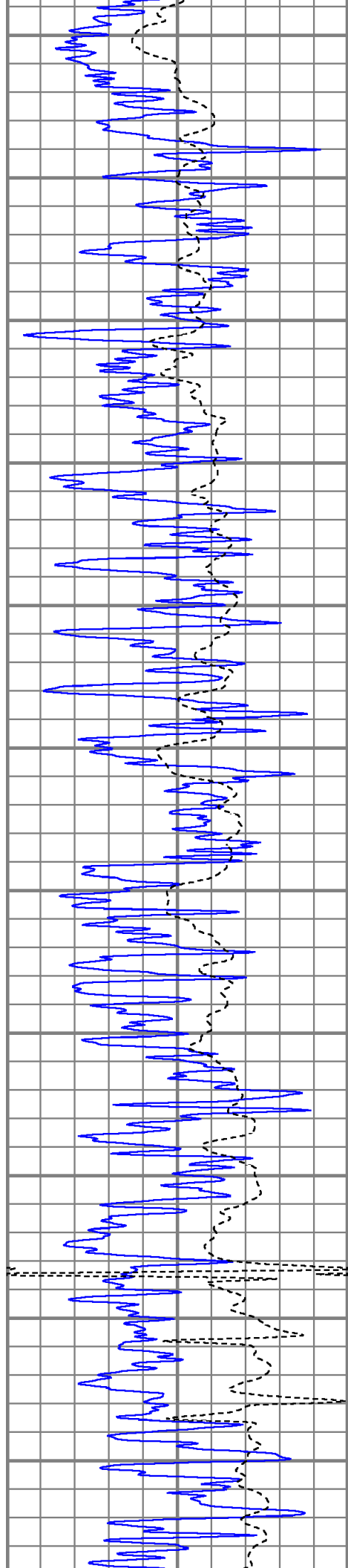
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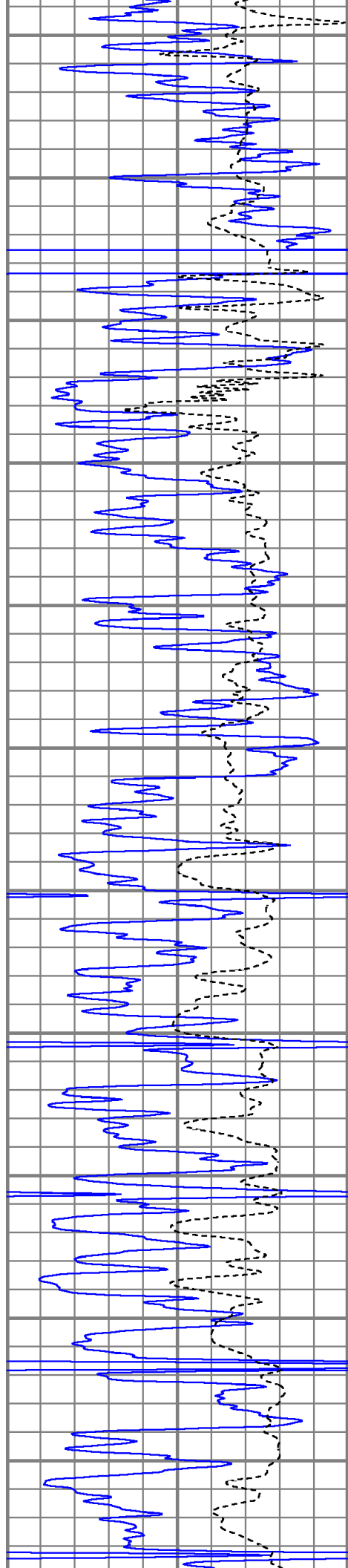
2150

2200

2250







2850

2900

2950

3000

3050

3100

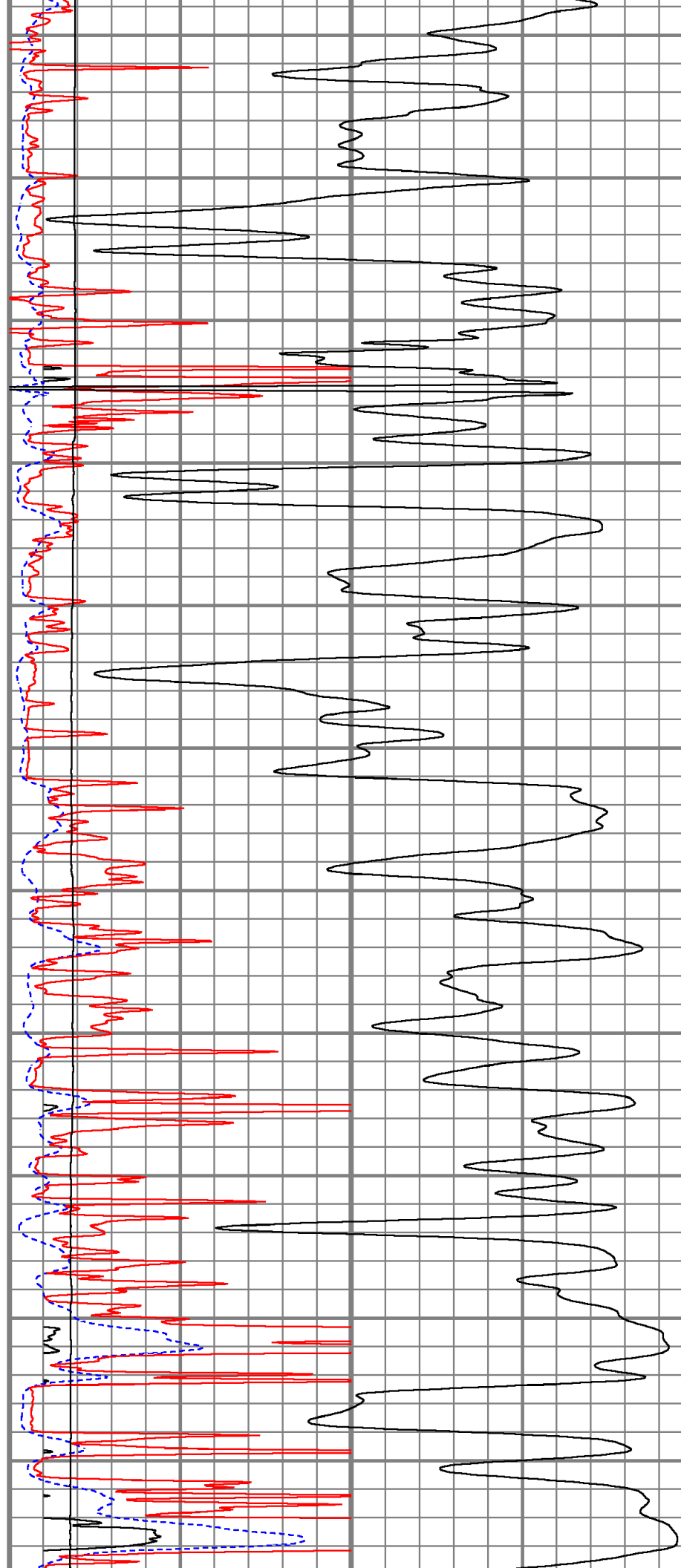
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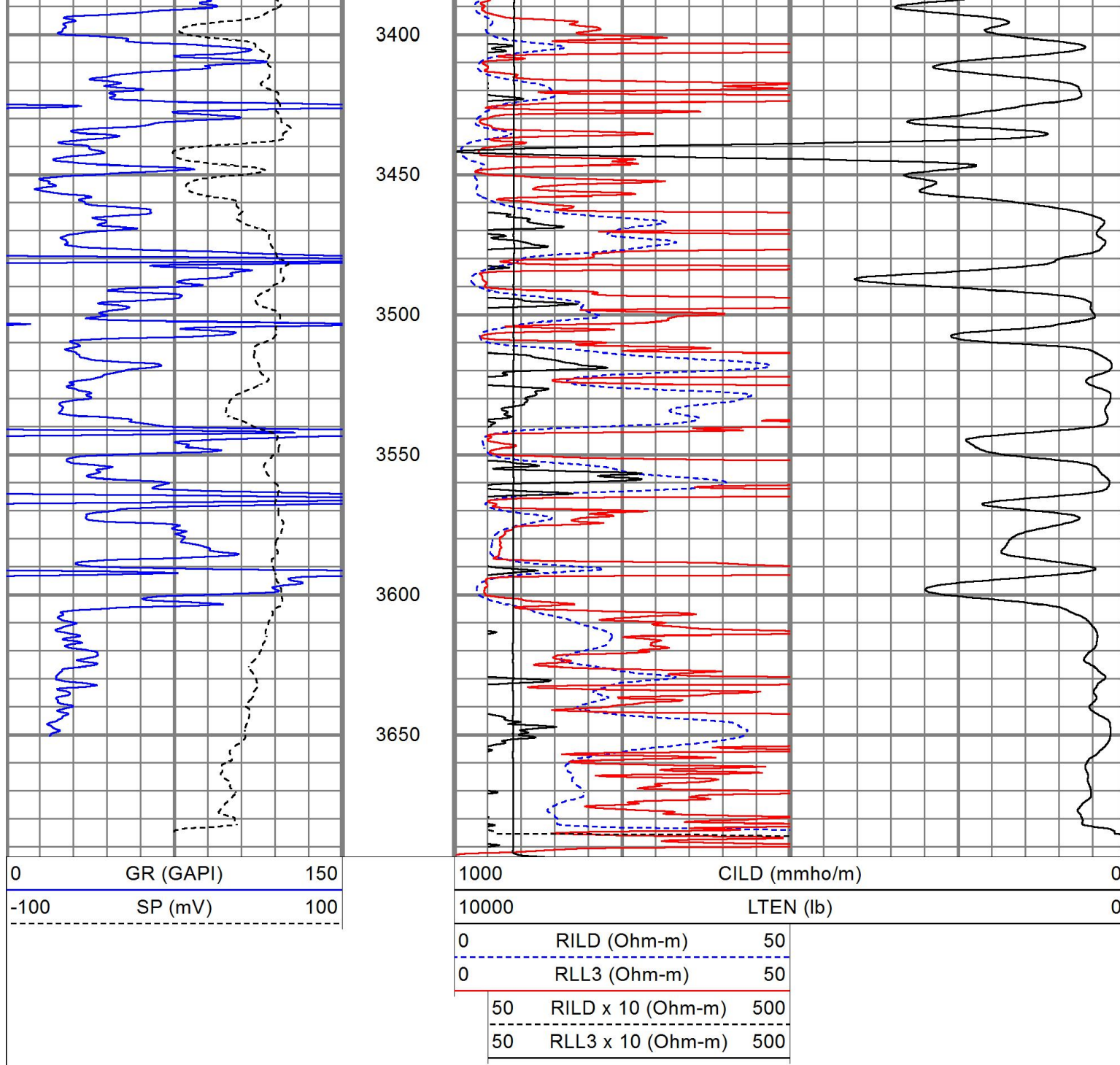
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3250

3300

3350

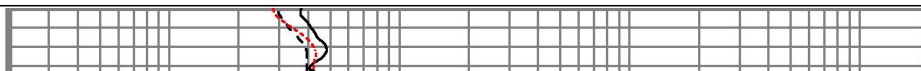


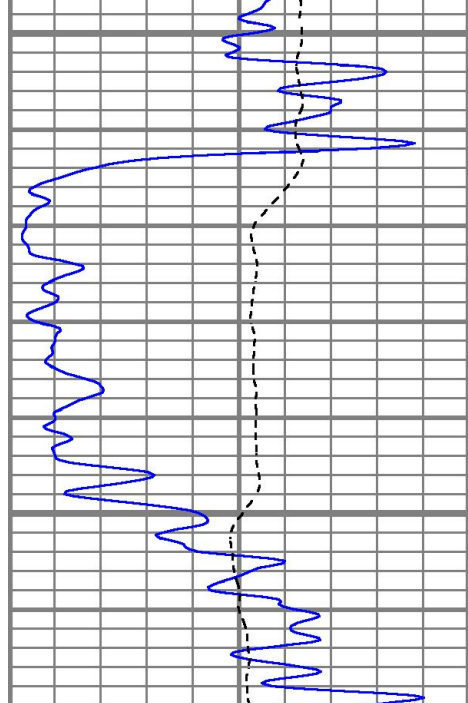


MAIN PASS

Database File pestahl#2-30oh.db
Dataset Pathname pass2
Presentation Format kdil
Dataset Creation Tue May 21 16:51:02 2019
Charted by Depth in Feet scaled 1:240

0	GR (GAPI)	150	0.2	RILD (Ohm-m)	2000
-100	SP (mV)	100	0.2	RLL3 (Ohm-m)	2000
			0.2	RILM (Ohm-m)	2000

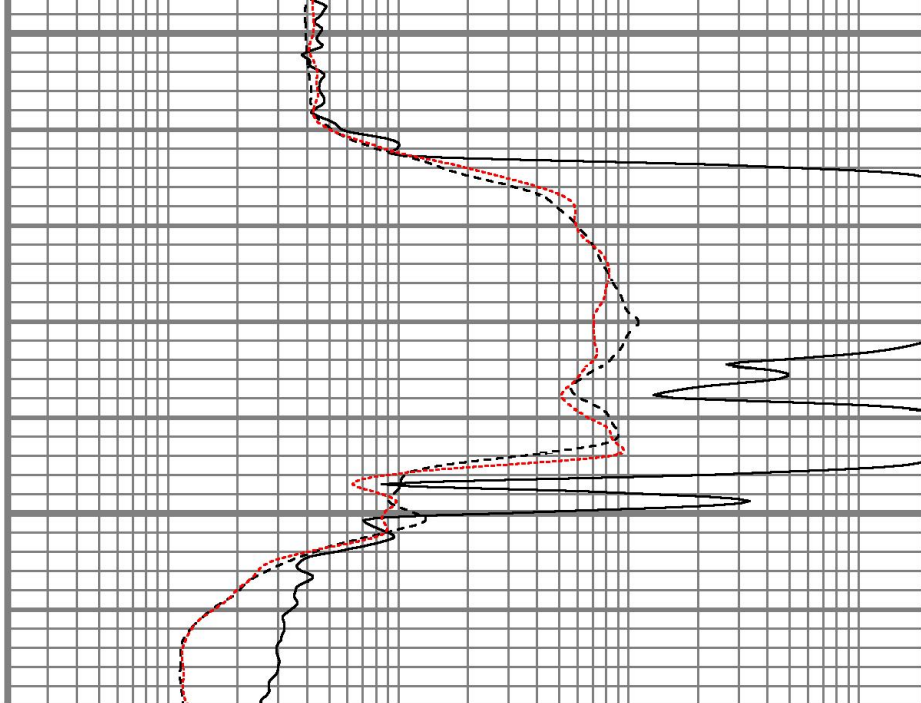




0	GR (GAPI)	150
-100	SP (mV)	100

1550

1600



0.2	RILD (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
0.2	RILM (Ohm-m)	2000

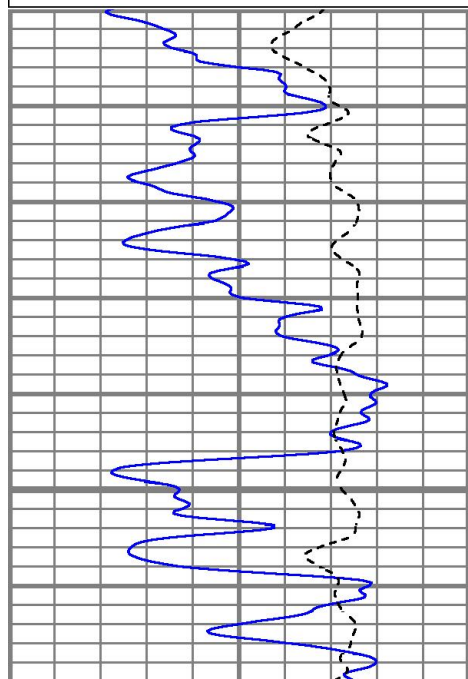


MAIN PASS

Database File pestahl#2-30oh.db
 Dataset Pathname pass2
 Presentation Format kdil
 Dataset Creation Tue May 21 16:51:02 2019
 Charted by Depth in Feet scaled 1:240

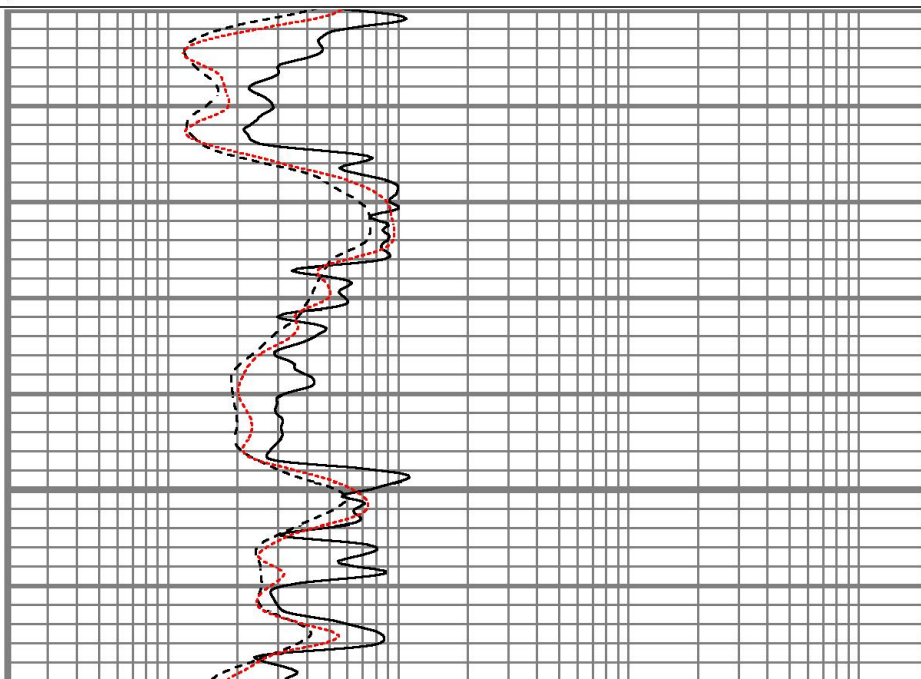
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-100	SP (mV)	100

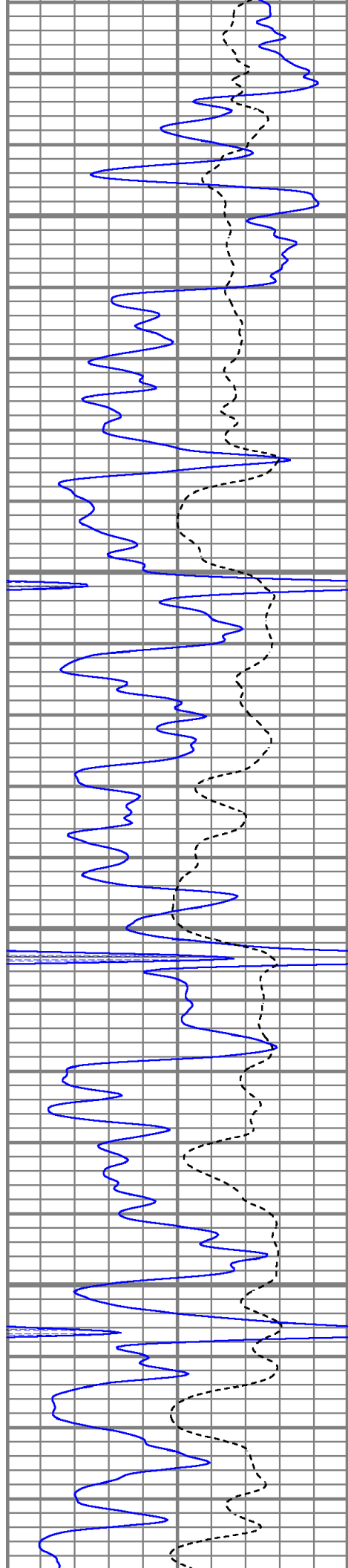
0.2	RILD (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
0.2	RILM (Ohm-m)	2000



3000

3050



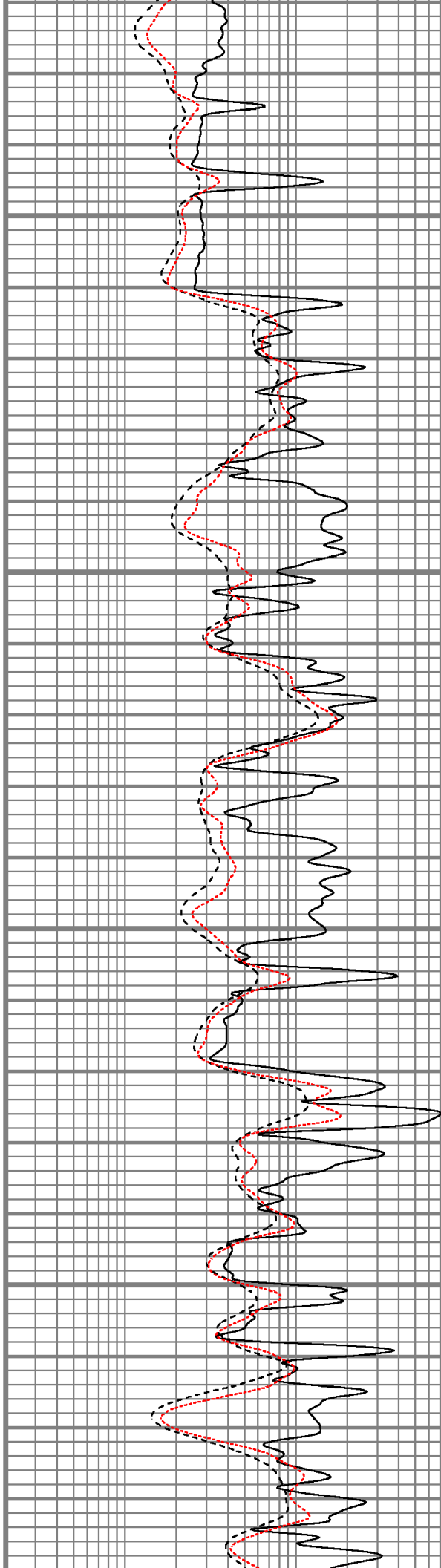


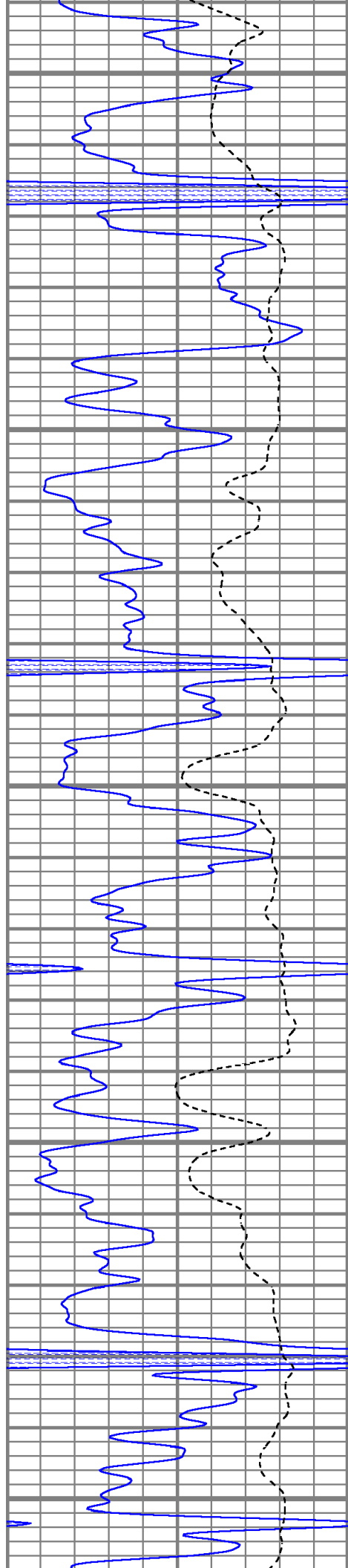
3100

3150

3200

3250





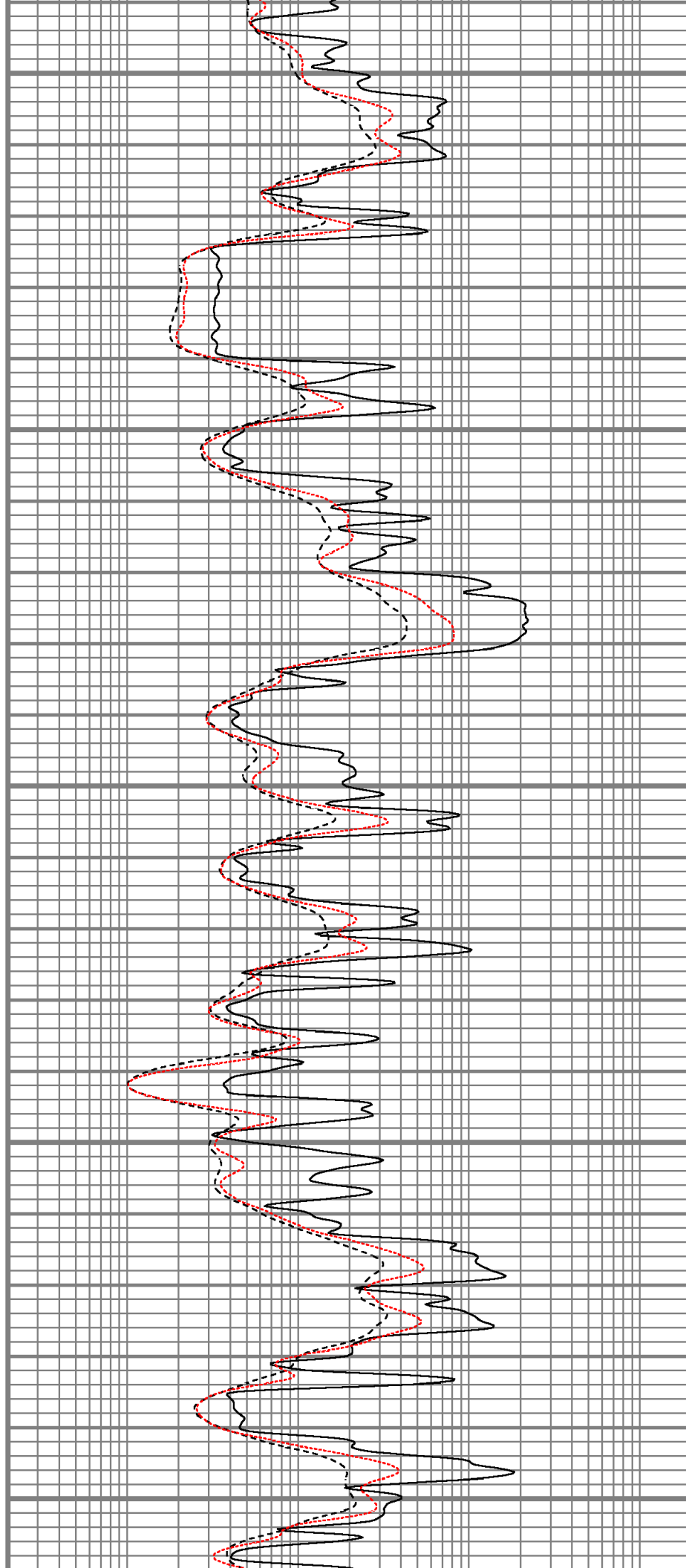
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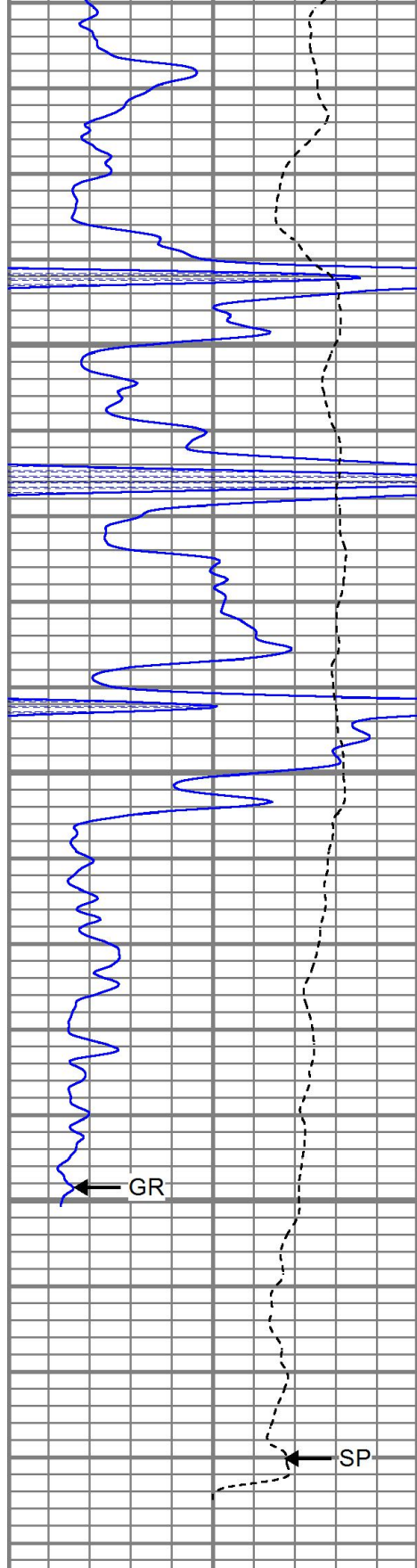
3350

3400

3450

3500



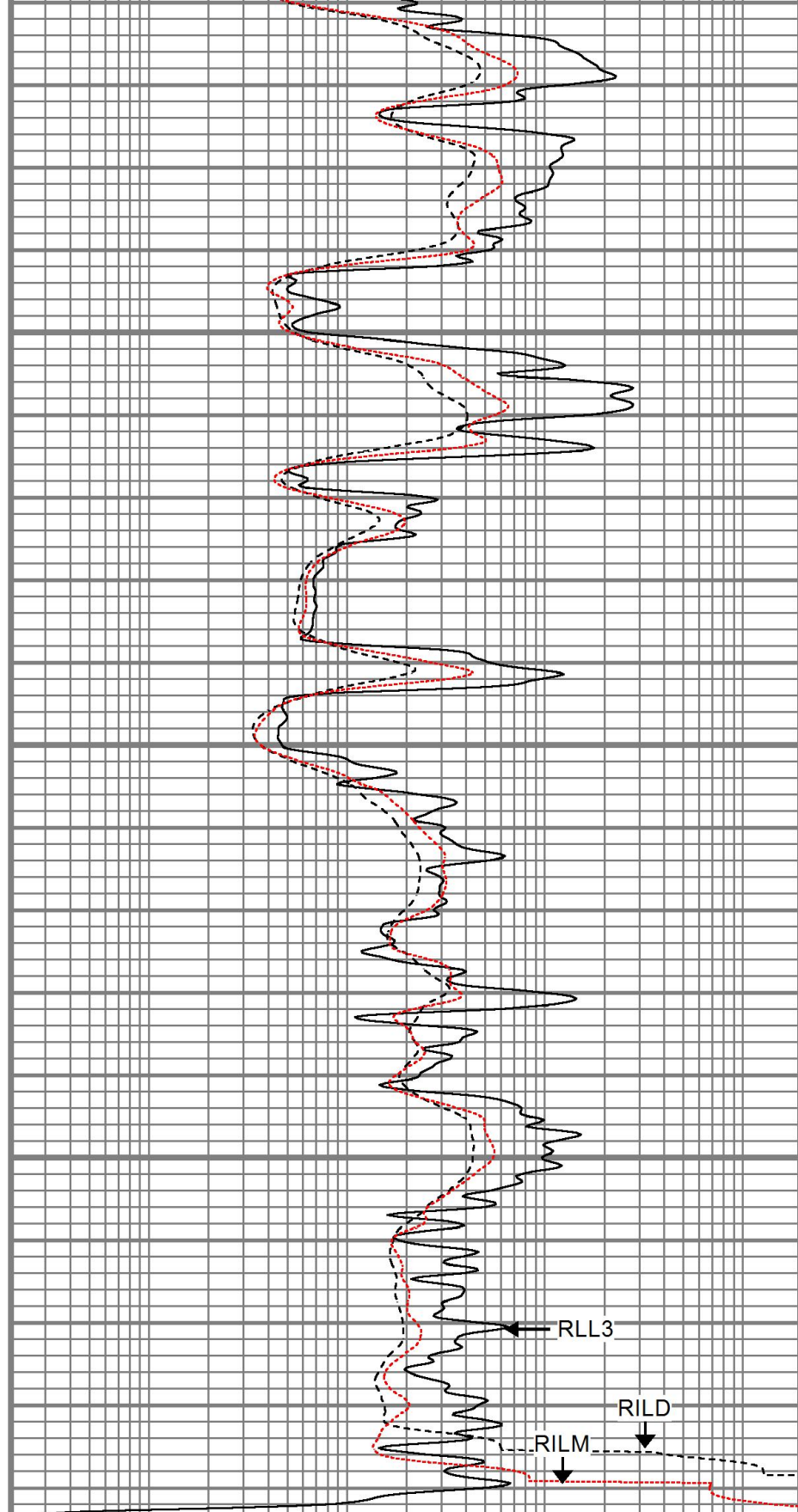


0	GR (GAPI)	150
-100	SP (mV)	100

3550

3600

3650



0.2	RILD (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
0.2	RILM (Ohm-m)	2000



REPEAT SECTION

Database File

Dataset Pathname

Presentation Format

Dataset Creation

Charted by

pestahl#2-30oh.db

pass1.1

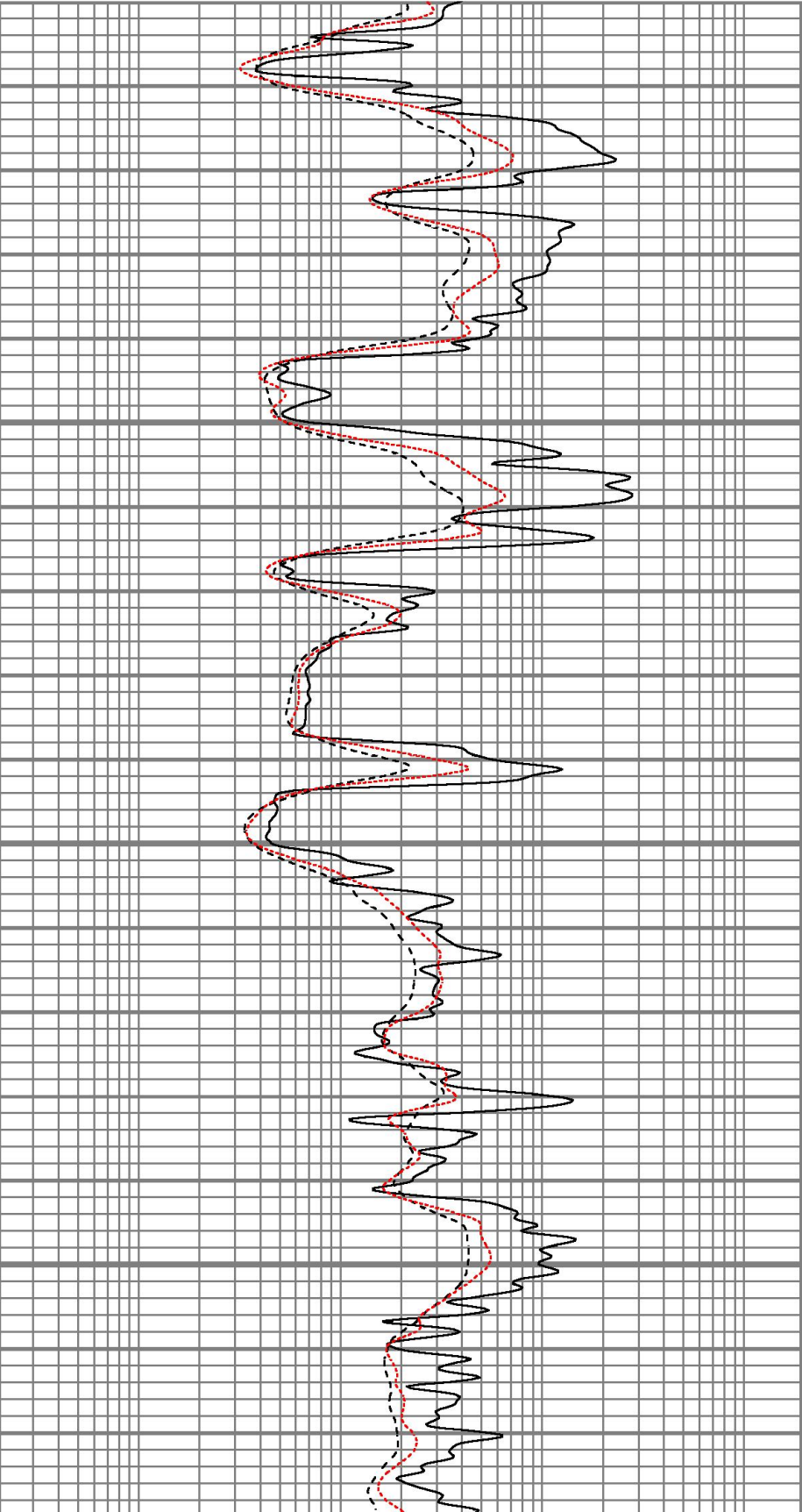
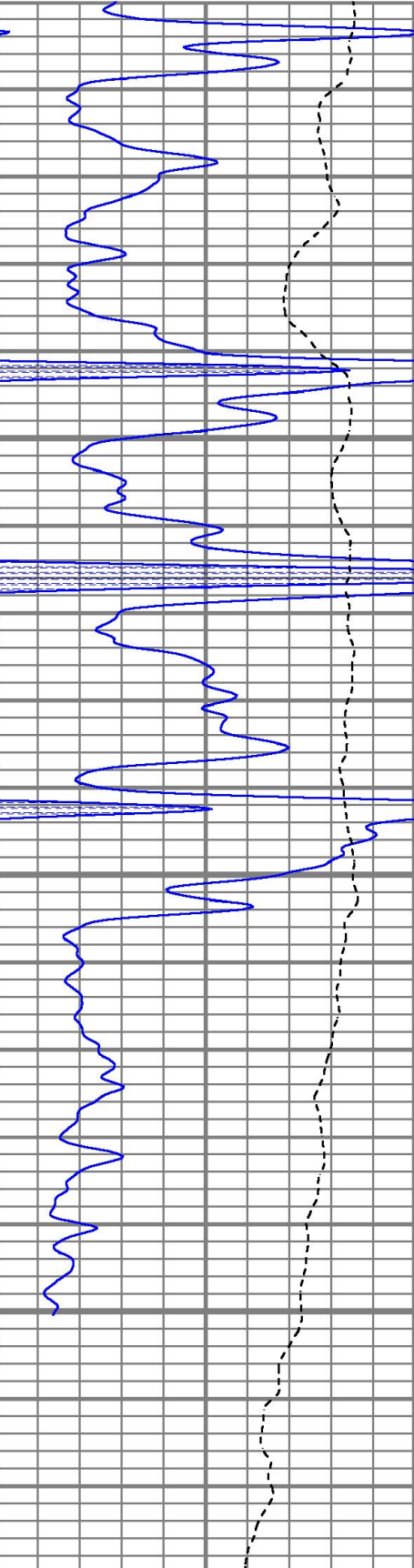
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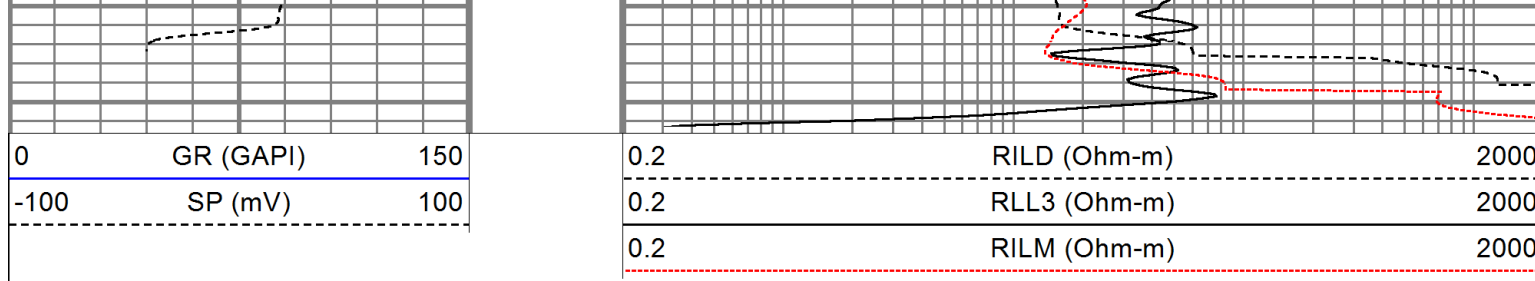
Tue May 21 16:56:19 2019

Depth in Feet scaled 1:240

0	GR (GAPI)	150
-100	SP (mV)	100

0.2	RILD (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
0.2	RILM (Ohm-m)	2000





Calibration Report		
Database File	pestahl#2-30oh.db	
Dataset Pathname	pass2	
Dataset Creation	Tue May 21 16:51:02 2019	

Dual Induction Calibration Report

Serial-Model:	5375-G
Surface Cal Performed:	Fri Apr 19 12:45:28 2019
Downhole Cal Performed:	Fri Apr 19 12:45:28 2019
After Survey Verification Performed:	Fri Apr 19 12:45:28 2019

Surface Calibration									
Readings				References			Results		
Loop:	Air	Loop		Air	Loop		m	b	
Deep	0.002	0.642	V	0.000	350.000	mmho/m	546.631	-1.028	
Medium	0.006	0.727	V	0.000	400.000	mmho/m	555.208	-3.497	
Internal:	Zero	Cal		Zero	Cal		m	b	
Deep	0.002	0.642	V	0.000	350.000	mmho/m	546.502	-0.822	
Medium	0.006	0.727	V	0.000	550.000	mmho/m	763.570	-4.829	

Downhole Calibration									
Readings				References			Results		
Internal:	Zero	Cal		Zero	Cal		m	b	
Deep	0.000	0.000	mmho/m	-0.206	349.877	mmho/m	1.000	0.000	
Medium	0.000	0.000	mmho/m	0.014	399.930	mmho/m	1.000	0.000	
Shallow	2.429	0.011	V	500.000	2.000	Ohm-m	200.929	0.282	

After Survey Verification									
Readings				Targets			Results		
Internal:	Zero	Cal		Zero	Cal		m'	b'	
Deep	0.000	0.000	mmho/m	0.000	0.000	mmho/m	1.000	0.000	
Medium	0.000	0.000	mmho/m	0.000	0.000	mmho/m	1.000	0.000	
Shallow	0.000	0.000	Ohm-m	500.000	2.000	Ohm-m	1.000	0.000	

Neutron Calibration Report

Serial Number:	AD5139	
Tool Model:	ADMY5139	
Performed:	(Not Performed)	
Calibrator Value:	1	NAPI
Calibrator Reading:	1	cps

Sensitivity:

1

NAPI/cps

Temperature Calibration Report

Serial Number: WithMC
 Tool Model: WMC
 Performed: Fri Apr 19 12:15:04 2019

Reference Reading

Low Reference: 0.00 degF 0.00 degF
 High Reference: 1.00 degF 1.00 degF

Gain: 1.00
 Offset: 0.00
 Delta Spacing 1

Inclinometer Calibration Report

Performed: Fri Apr 19 12:14:53 2019

Low Read. High Read. Low Ref. High Ref.

X Accelerometer
 205.00 1843.00 -1.00 1.00 gee

Y Accelerometer
 205.00 1843.00 -1.00 1.00 gee

Z Accelerometer
 gee

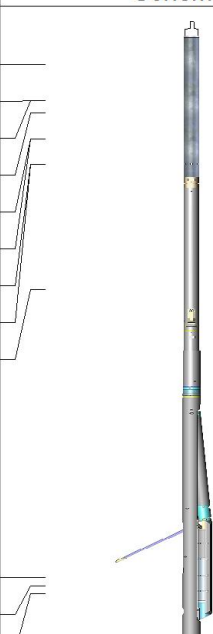
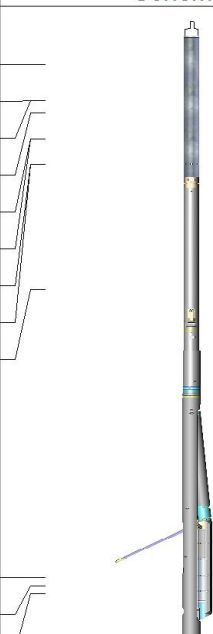
Gamma Ray Calibration Report

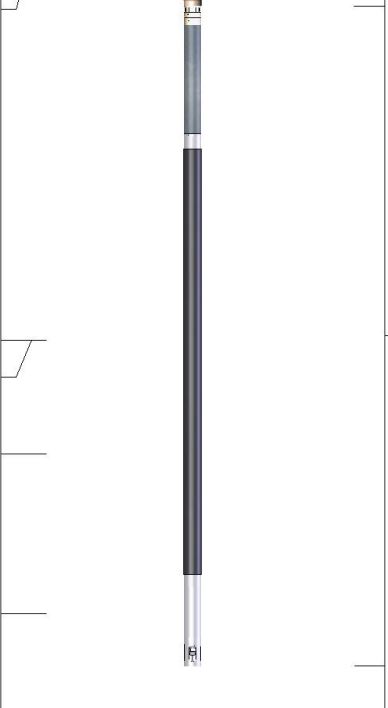
Serial Number: WithMC
 Tool Model: WMC
 Performed: Fri Apr 19 12:14:18 2019

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 1.0000 GAPI/cps

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.47		CHD-STD	0.50	1.69	1.00
ACCY	39.30		ADT-WMC (WithMC)	4.58	3.50	120.00
ACCX	39.30		Admyr Telemetry With Mudcell			
SSTAT	38.89					
PSTAT	38.05					
ASTAT	38.05		NEU-ADMY5139 (AD5139)	5.65	3.50	50.00
GRD	37.22		Admyer NEU DIGITAL			
TEMP	37.22					
NEU	33.15					
			CDL-GEARHART (2501)	9.69	4.00	240.00
LSD	23.78					
DCAL	23.49					

SSD	23.24				
SP	10.60				
CILD	10.60				
CILM	6.89				
RLL3	1.70				
Dataset: pestahl#2-30oh.db: field/well/run1/pass2 Total length: 41.89 ft Total weight: 756.00 lb O.D.: 4.00 in					