



DUAL
INDUCTION
LOG

Company ARP OPERATING, LLC.

Well CV #2-9

Field SWEET WILLIAM NORTHWEST

County ELLIS State KANSAS

Location: API #: 15-051-26984-0000

500' FSL & 1300' FEL

SEC 9 TWP 12S RGE 20W

Permanent Datum GROUND LEVEL Elevation 2296

Log Measured From KELLY BUSHING 5' A.G.L

Drilling Measured From KELLY BUSHING

Other Services
CDL/CNL/PE
MEL

Elevation

K.B. 2301
D.F. 2299
G.L. 2296

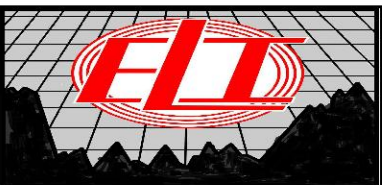
Date	5/18/20		
Run Number	ONE		
Depth Driller	4059		
Depth Logger	4056		
Bottom Logged Interval	4054		
Top Log Interval	00		
Casing Driller	8 5/8" @ 217'		
Casing Logger	220'		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 4100 PPM	
Density / Viscosity	9.1/56		
pH / Fluid Loss	11.0/6.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.70 @ 82F		
Rmf @ Meas. Temp	.52 @ 82F		
Rmc @ Meas. Temp	.84 @ 82F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.49 @ 117F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	////		
Maximum Recorded Temperature	117F		
Equipment Number	3802		
Location	HAYS, KANSAS		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	SEAN DEENIHAN		

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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

THANK YOU FOR USING ELI WIRELINE SERVICES, HAYS, KS. (785) 628-6395
DIRECTIONS
ELLIS KS. - 5 NORTH ON BLKTOP TO SEVERIN RD. - 1/2 WEST - NORTH INTO

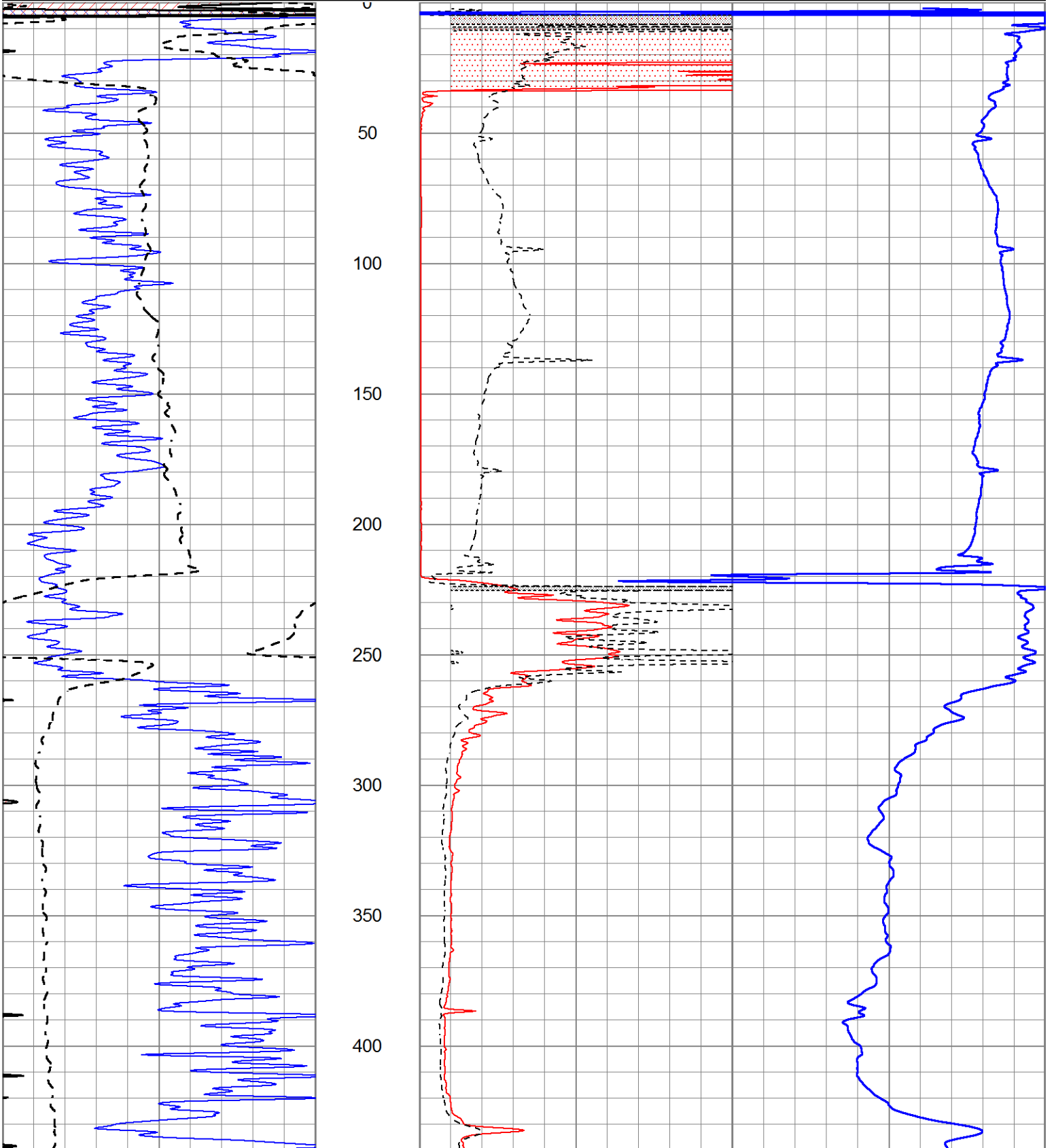


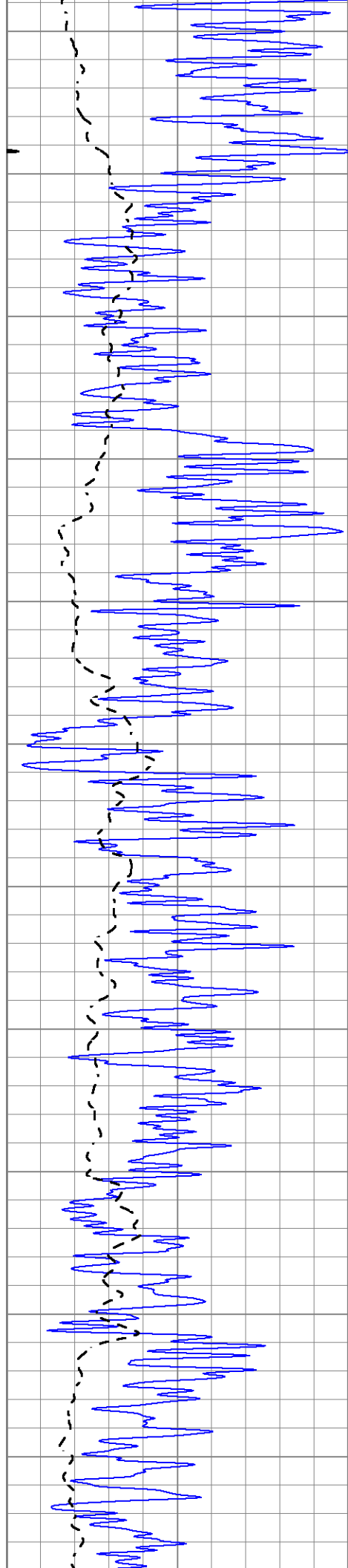
MAIN SECTION

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 Presentation Format _dil2
 Dataset Creation Mon May 18 21:04:05 2020
 Charted by Depth in Feet scaled 1:600

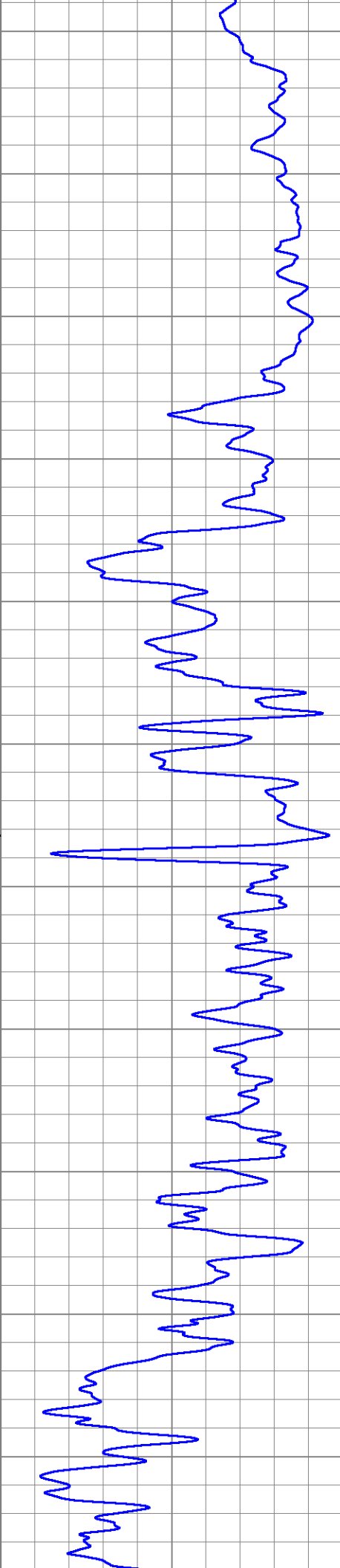
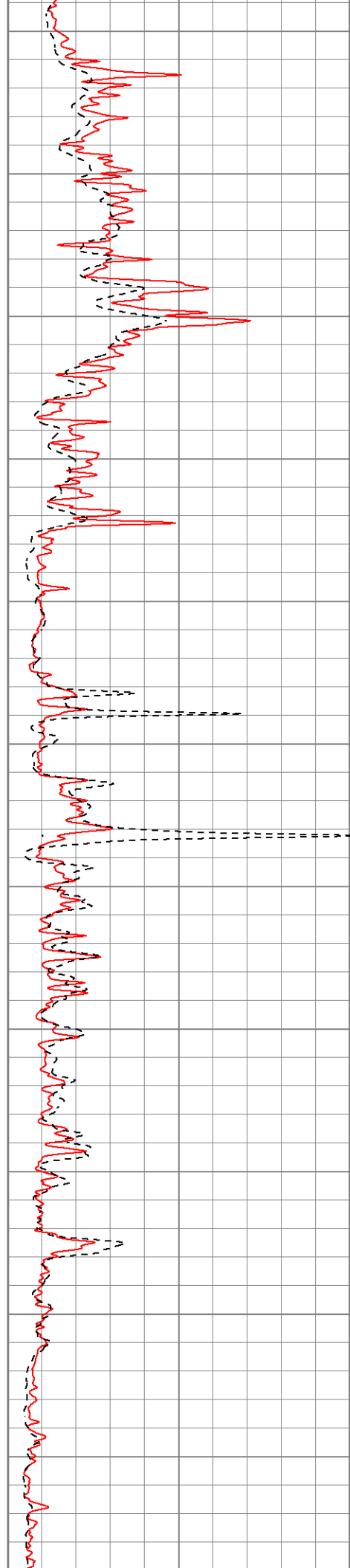
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-100	SP (mV)	100

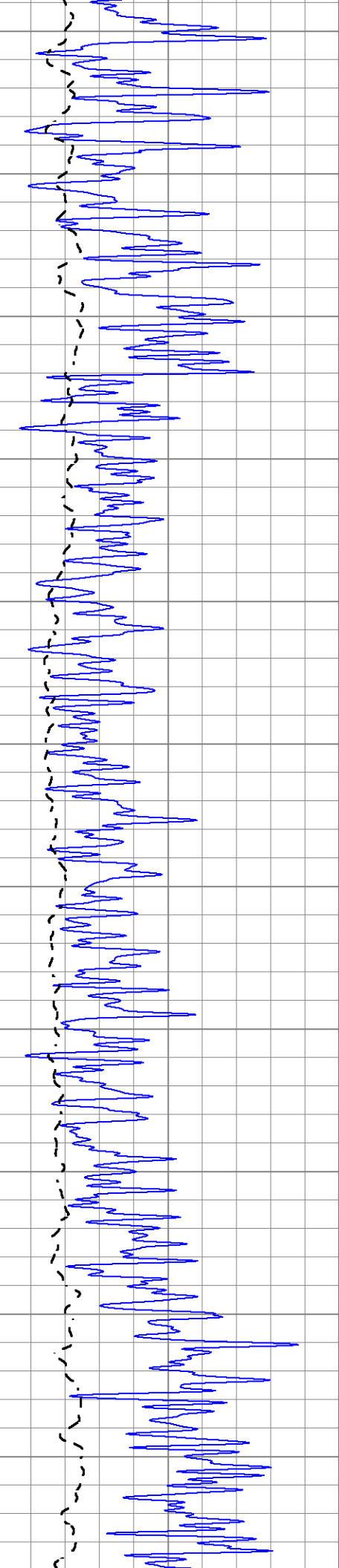
1000	CILD (mmho/m)	0
0	RLL3 (Ohm-m)	50
0	Deep Induction (Ohm-m)	50
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500



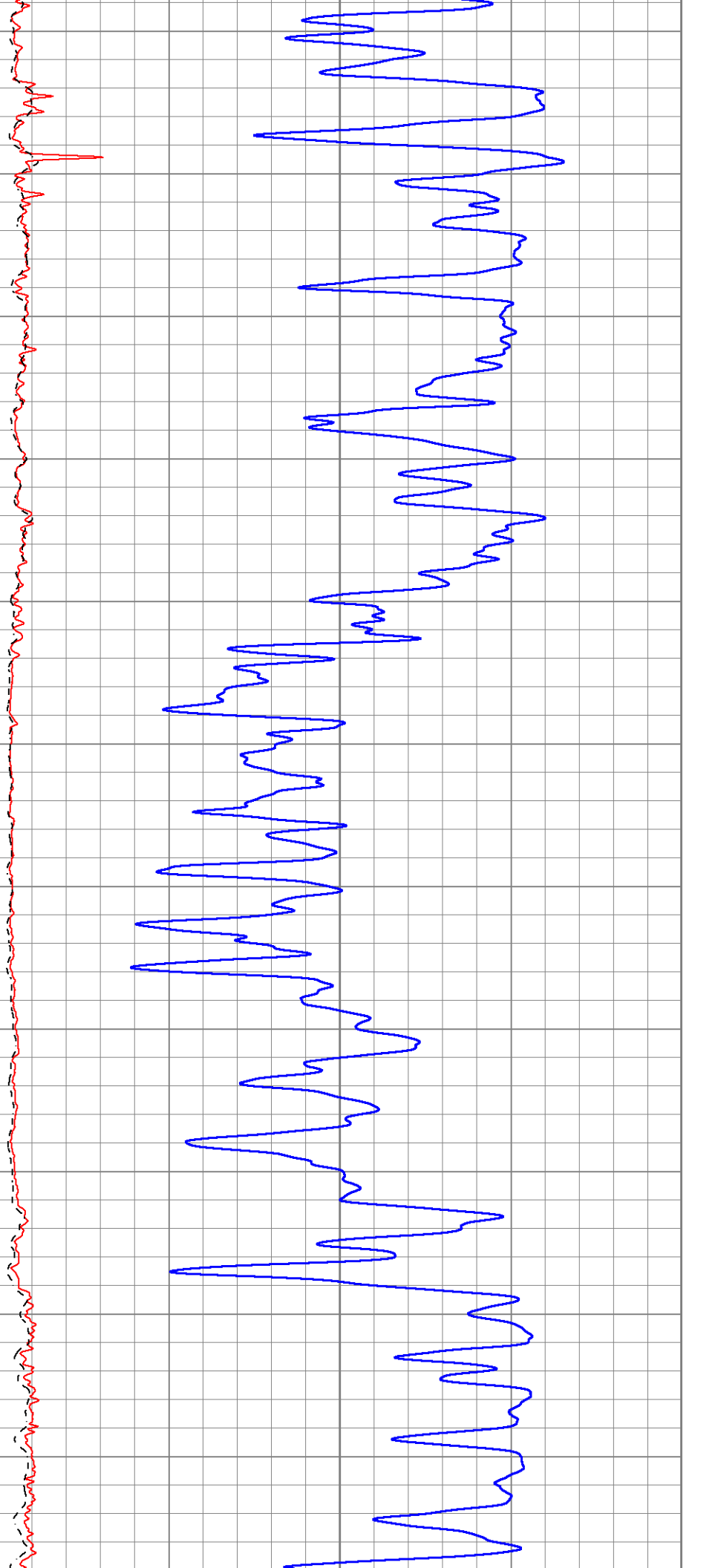


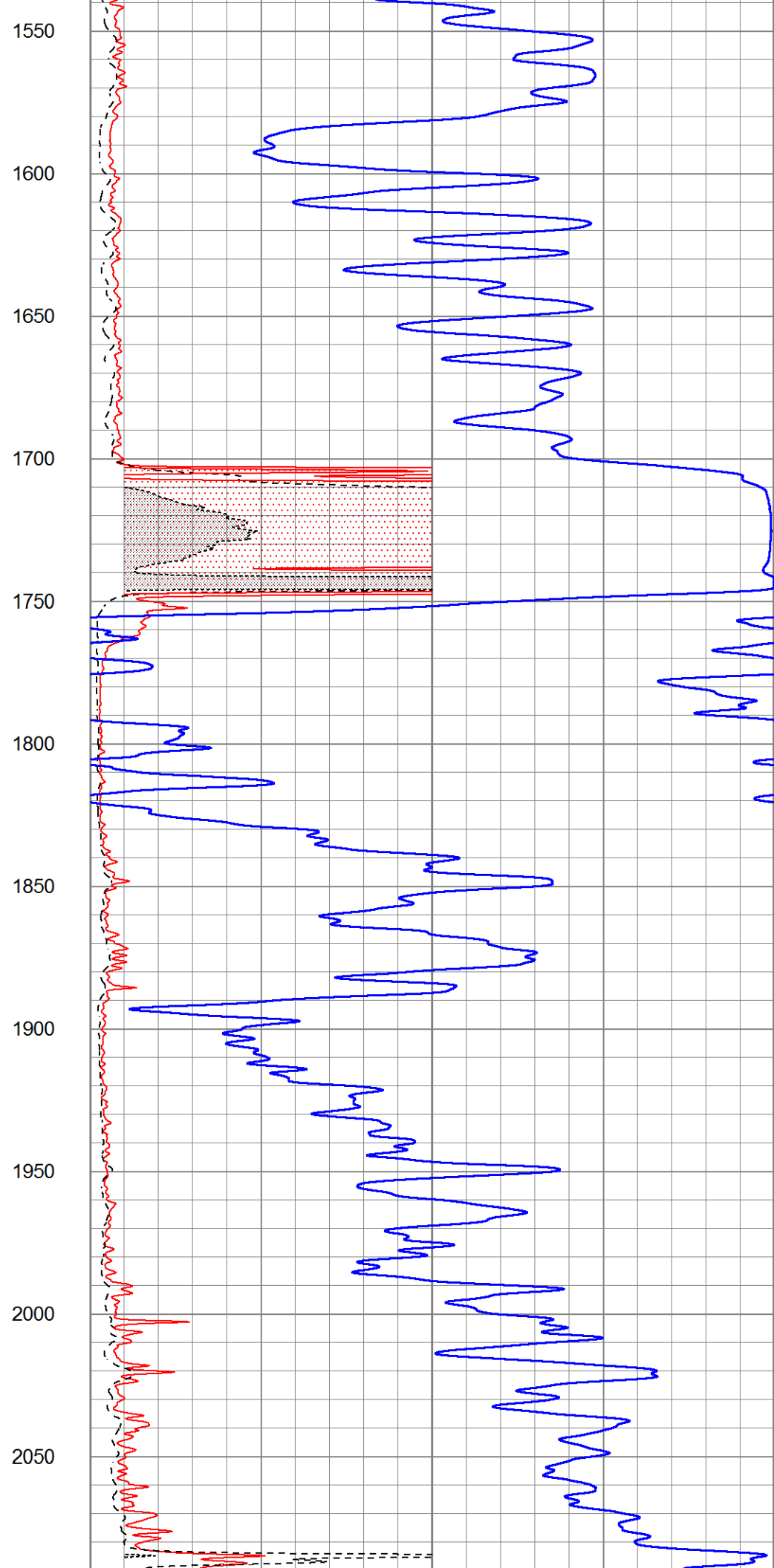
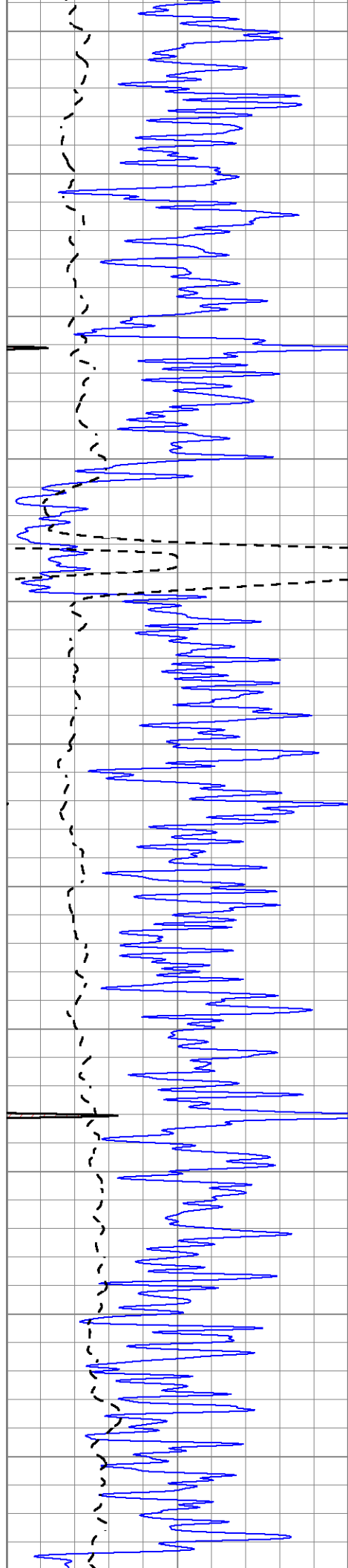
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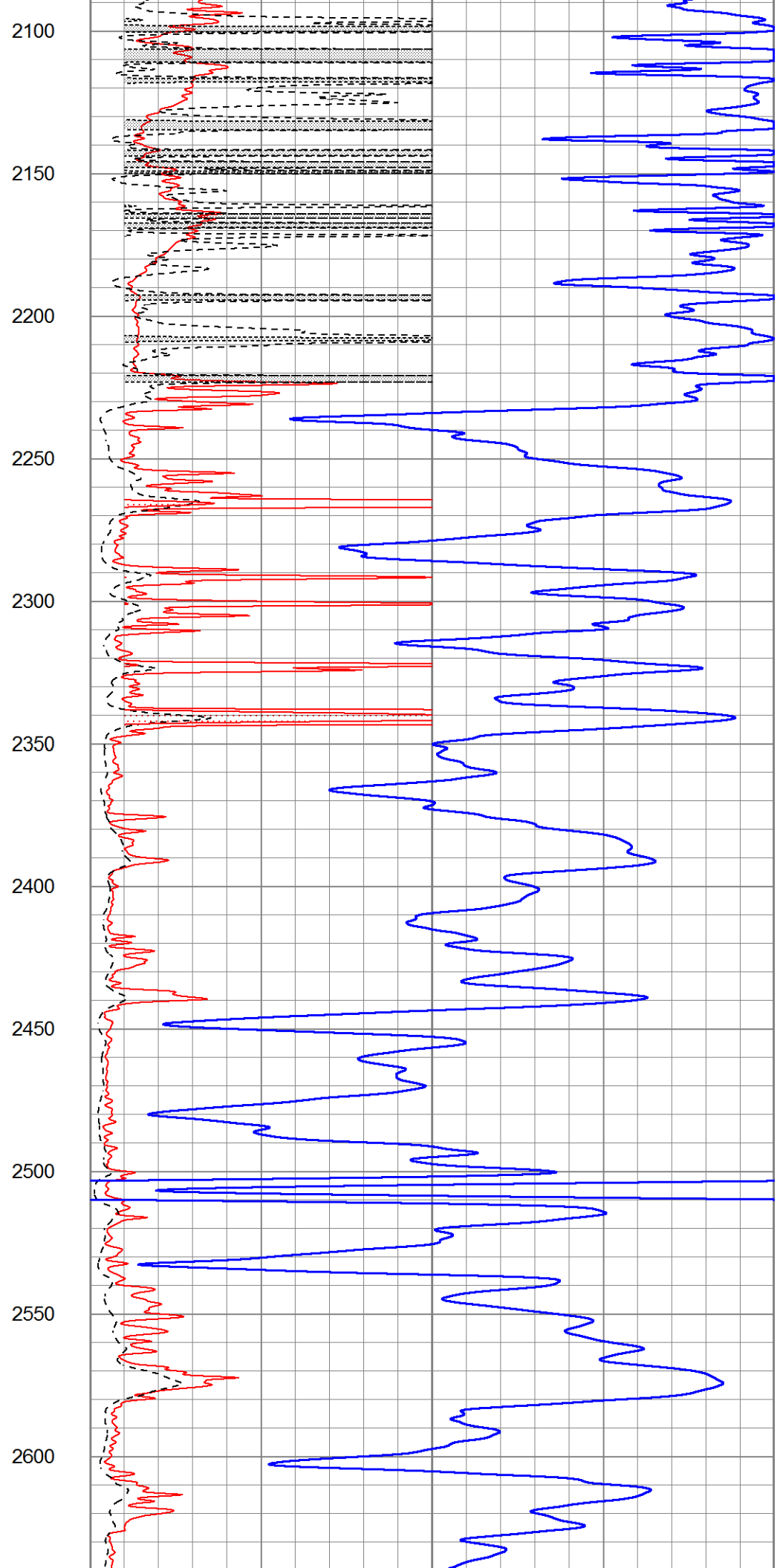
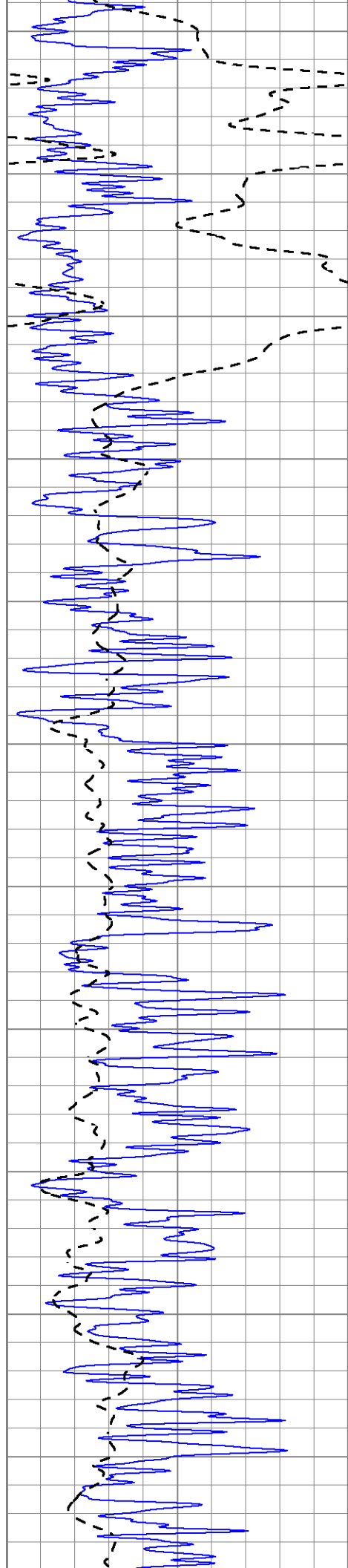


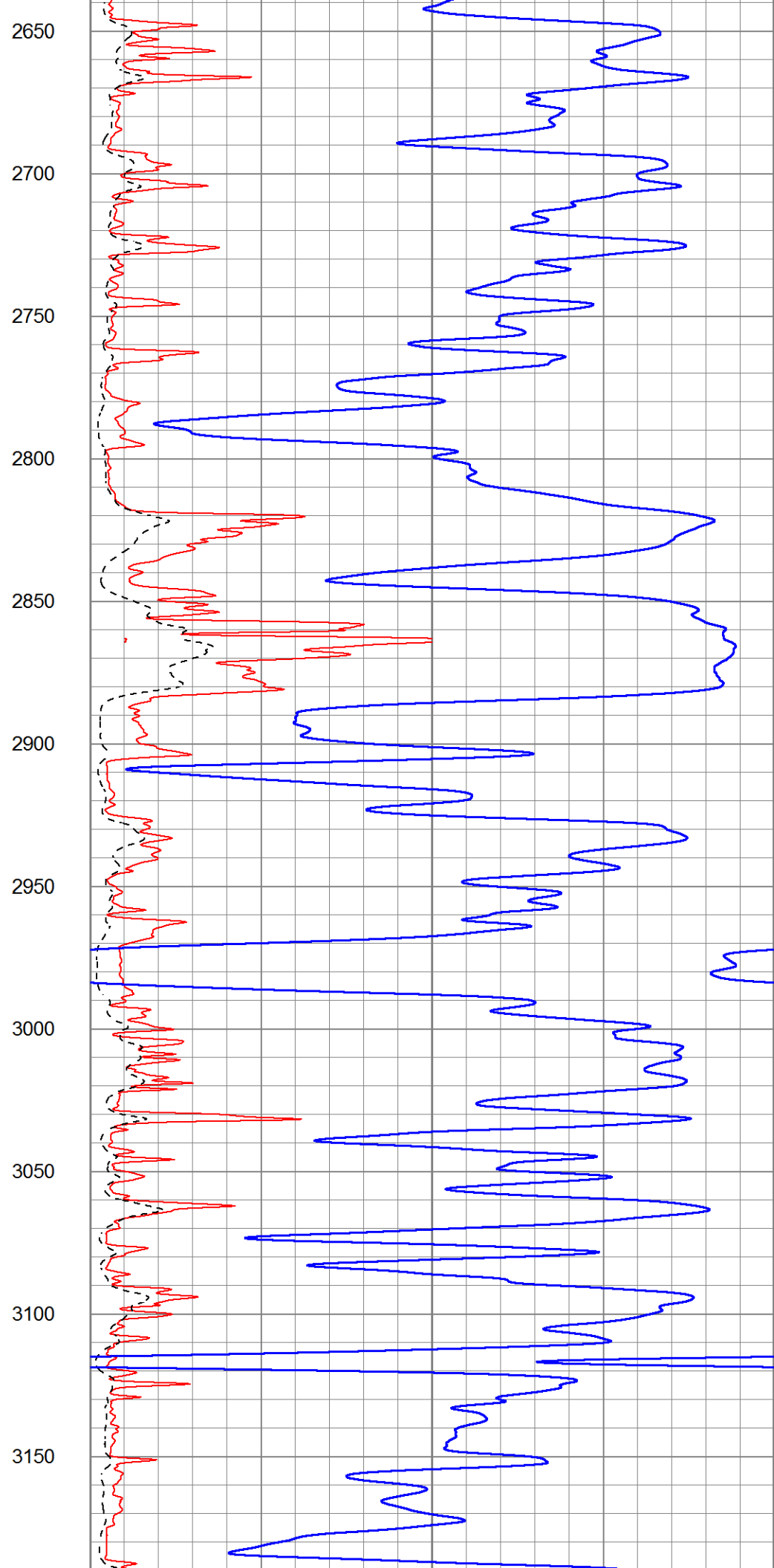
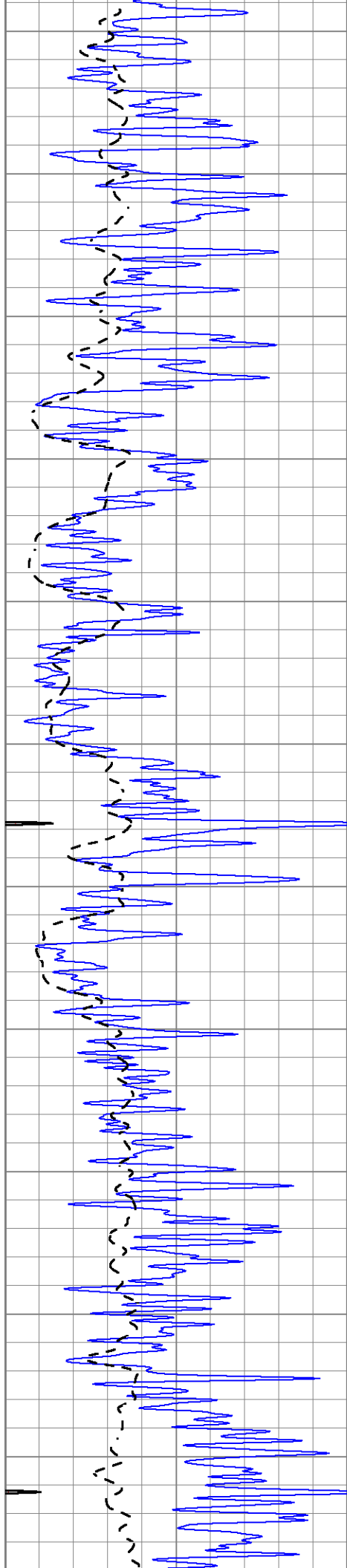


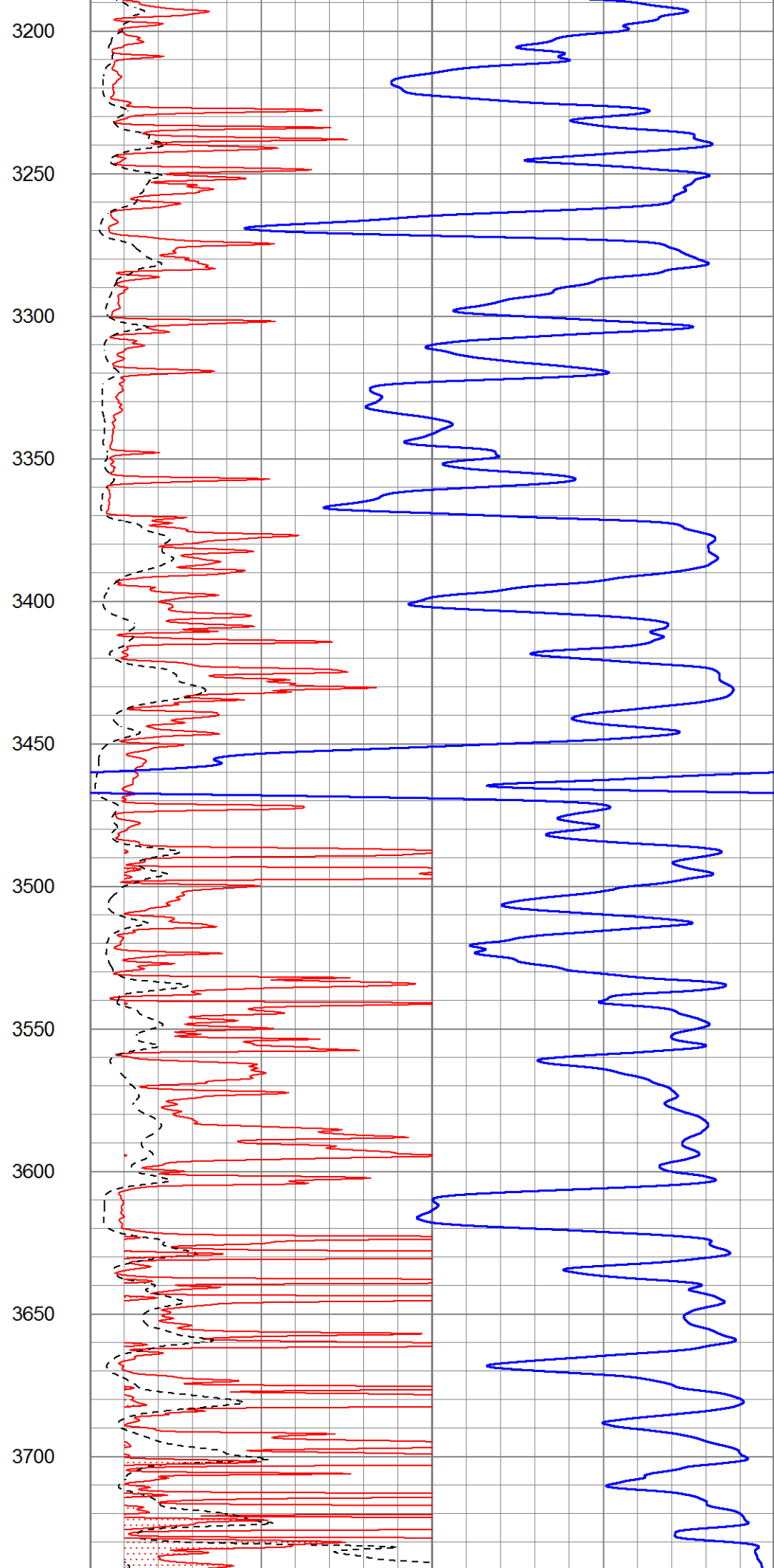
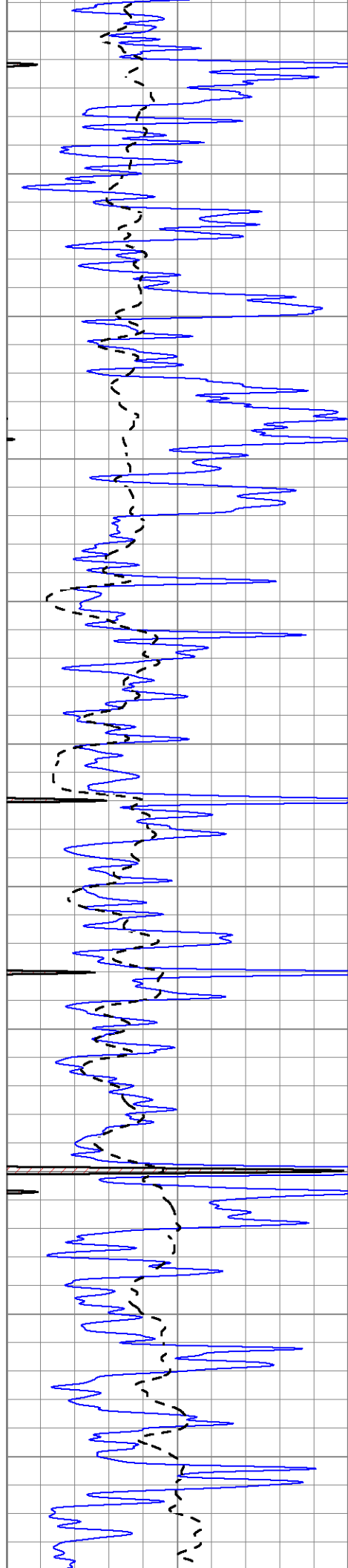
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1400
1450
1500

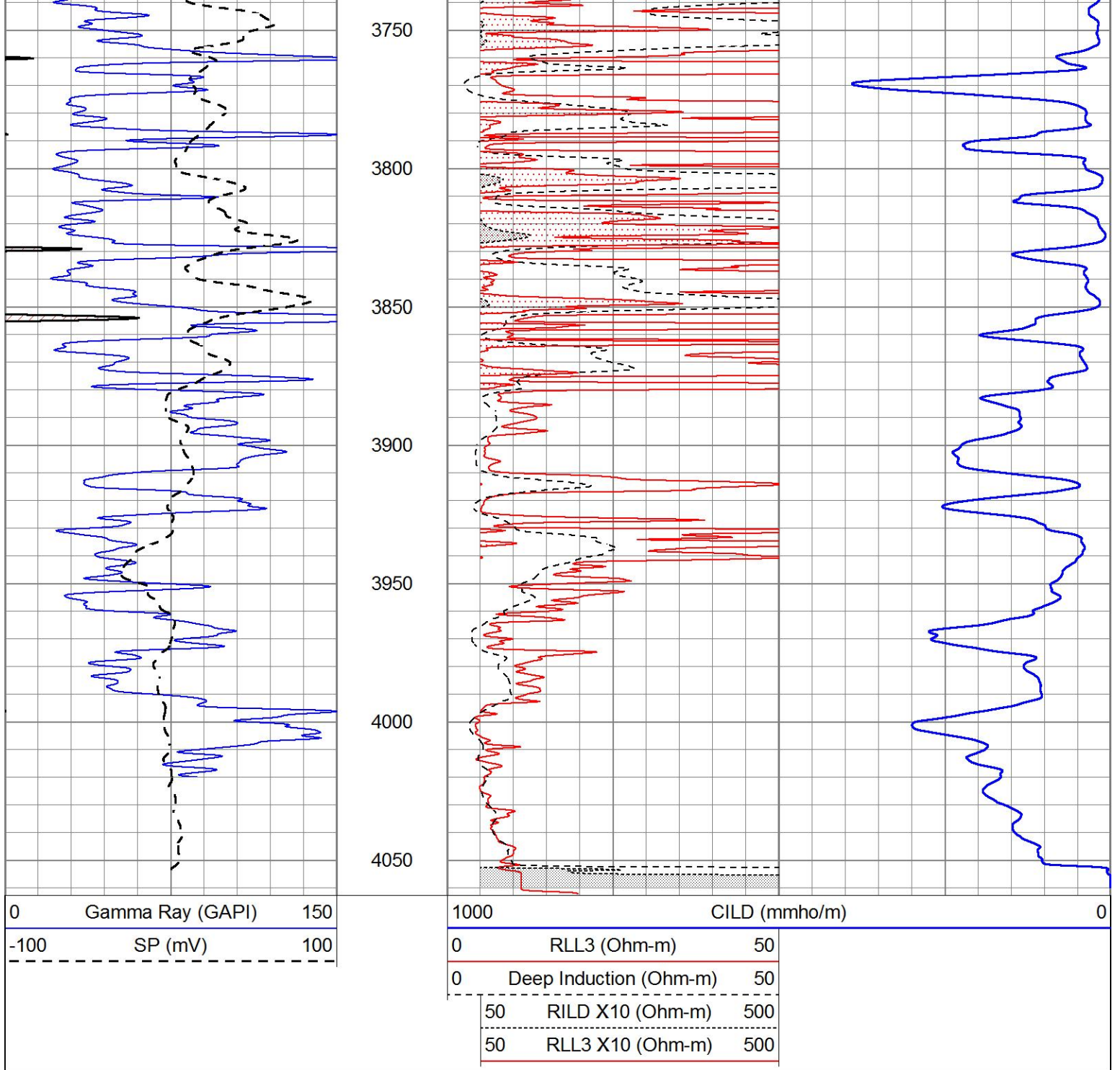








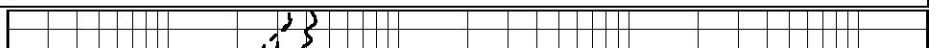


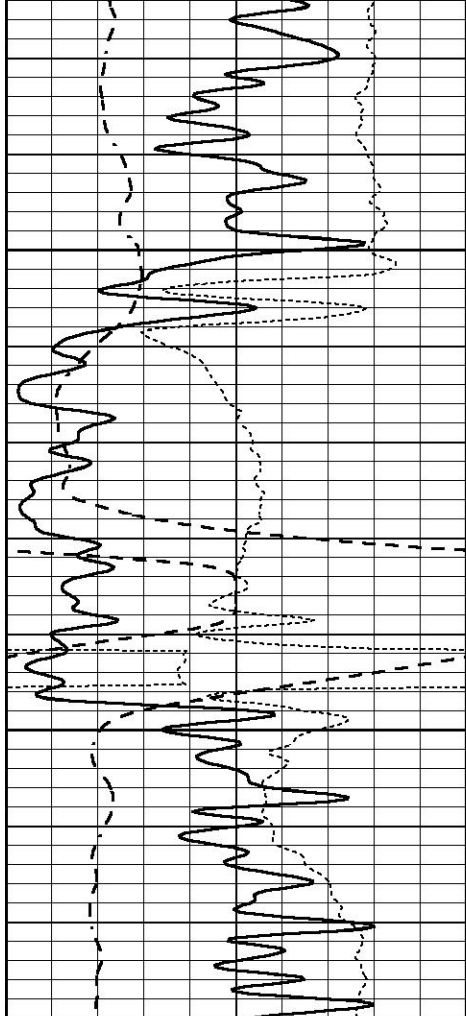


ANHYDRITE

Database File 4736pe.db
 Dataset Pathname pass3.2
 Presentation Format _dil
 Dataset Creation Mon May 18 20:17:52 2020
 Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	DEEP INDUCTION (Ohm-m)	2000

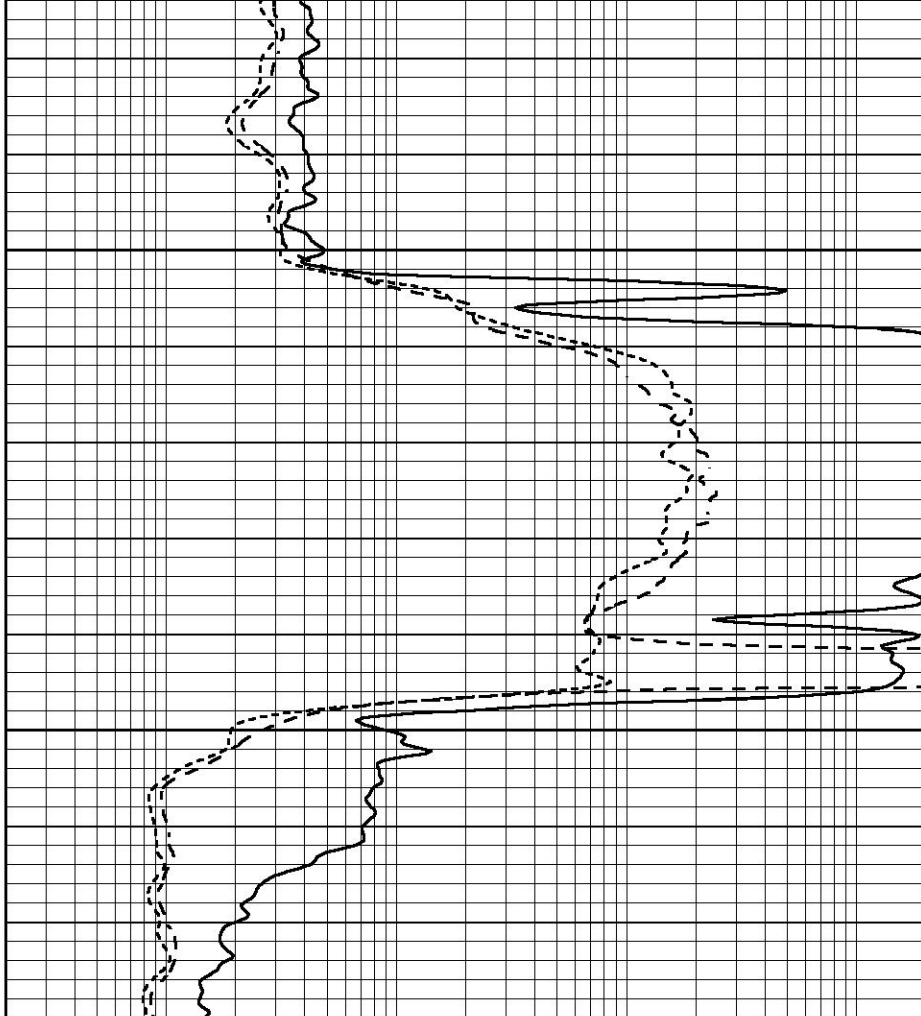




1700

1750

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50



0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

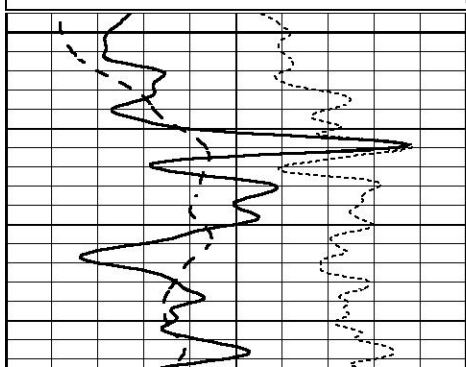


MAIN SECTION

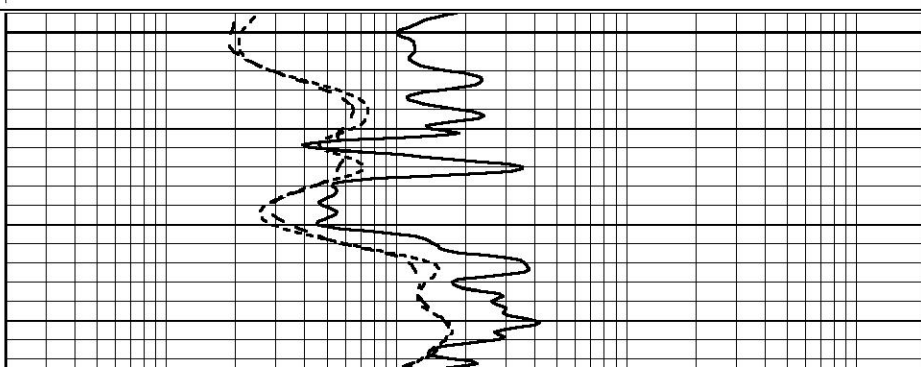
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 Dataset Pathname pass3.1
 Presentation Format _dil
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 Charted by Depth in Feet scaled 1:240

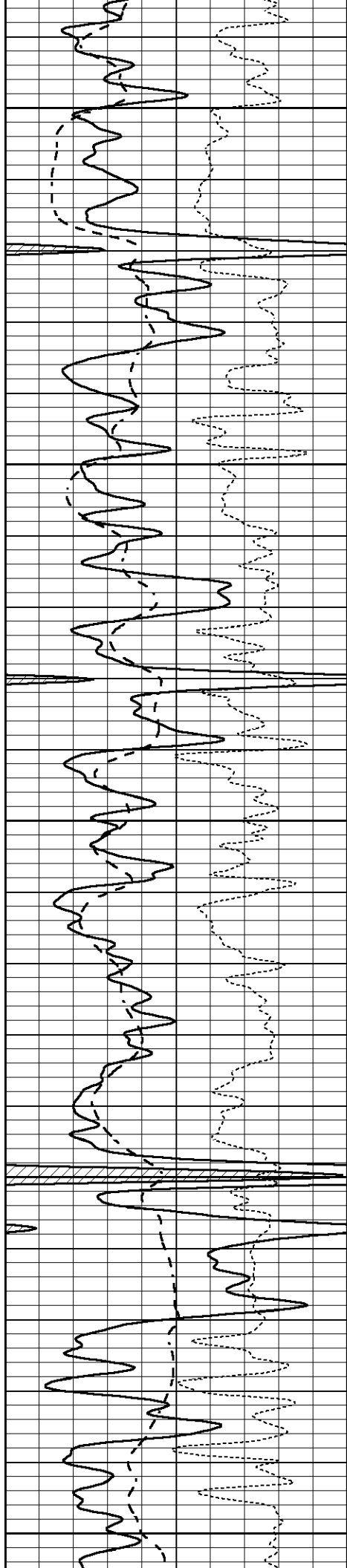
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000



3400





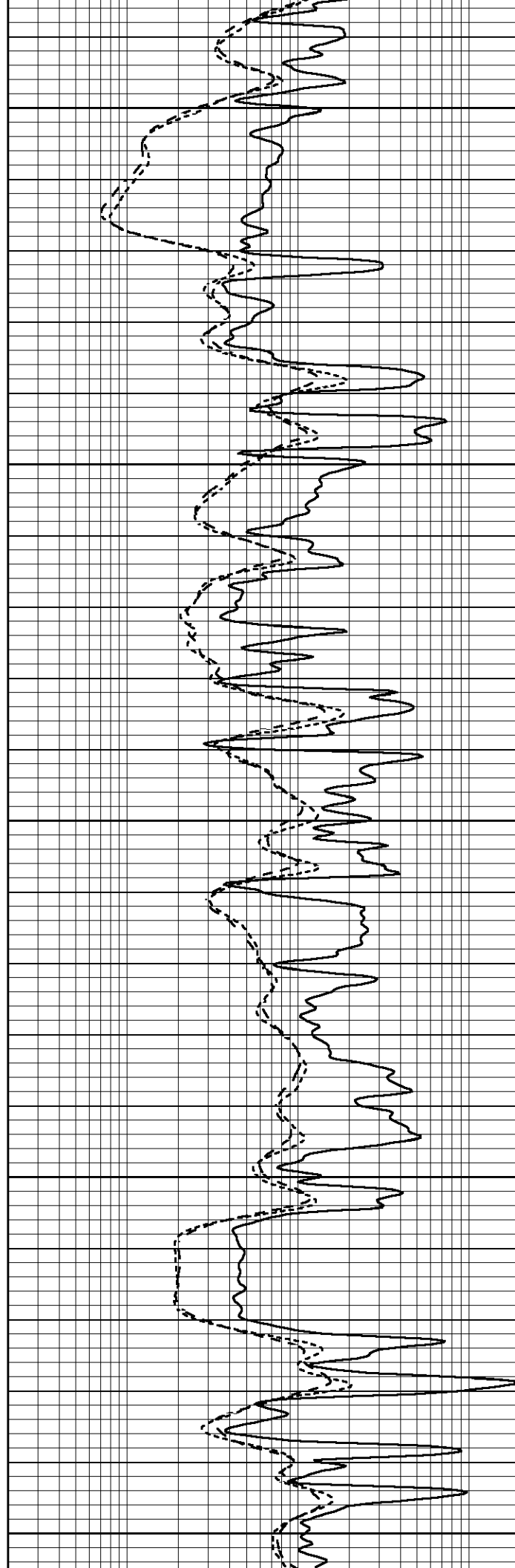
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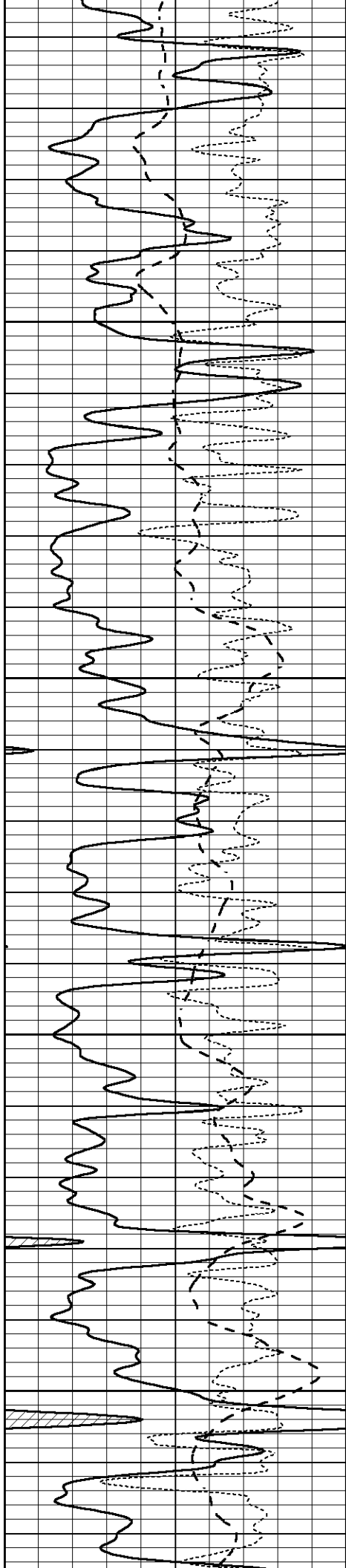
3500

3550

3600

3650



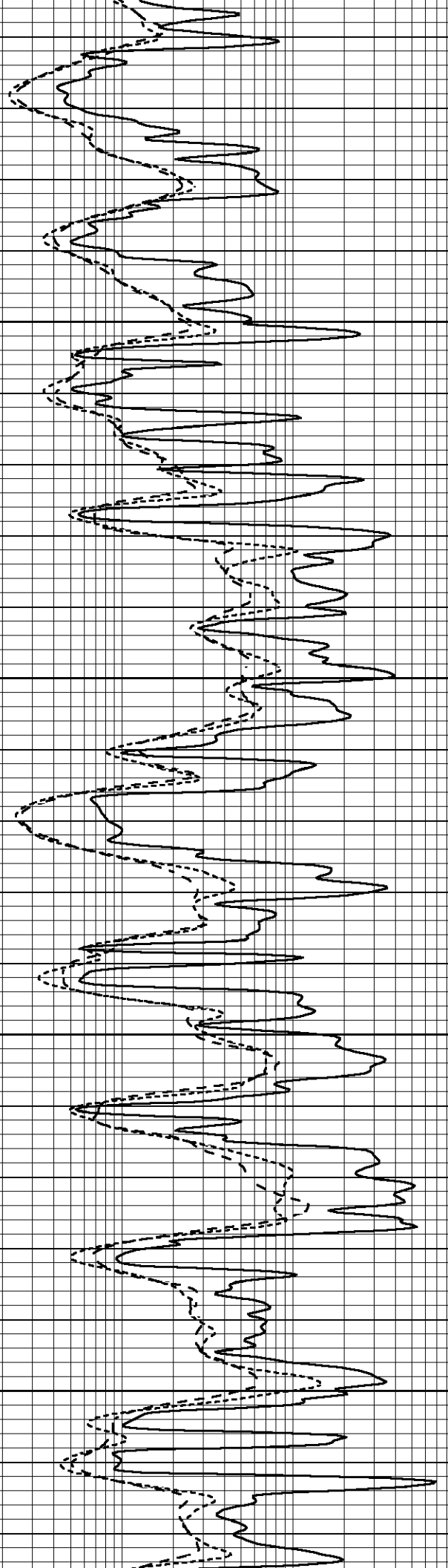


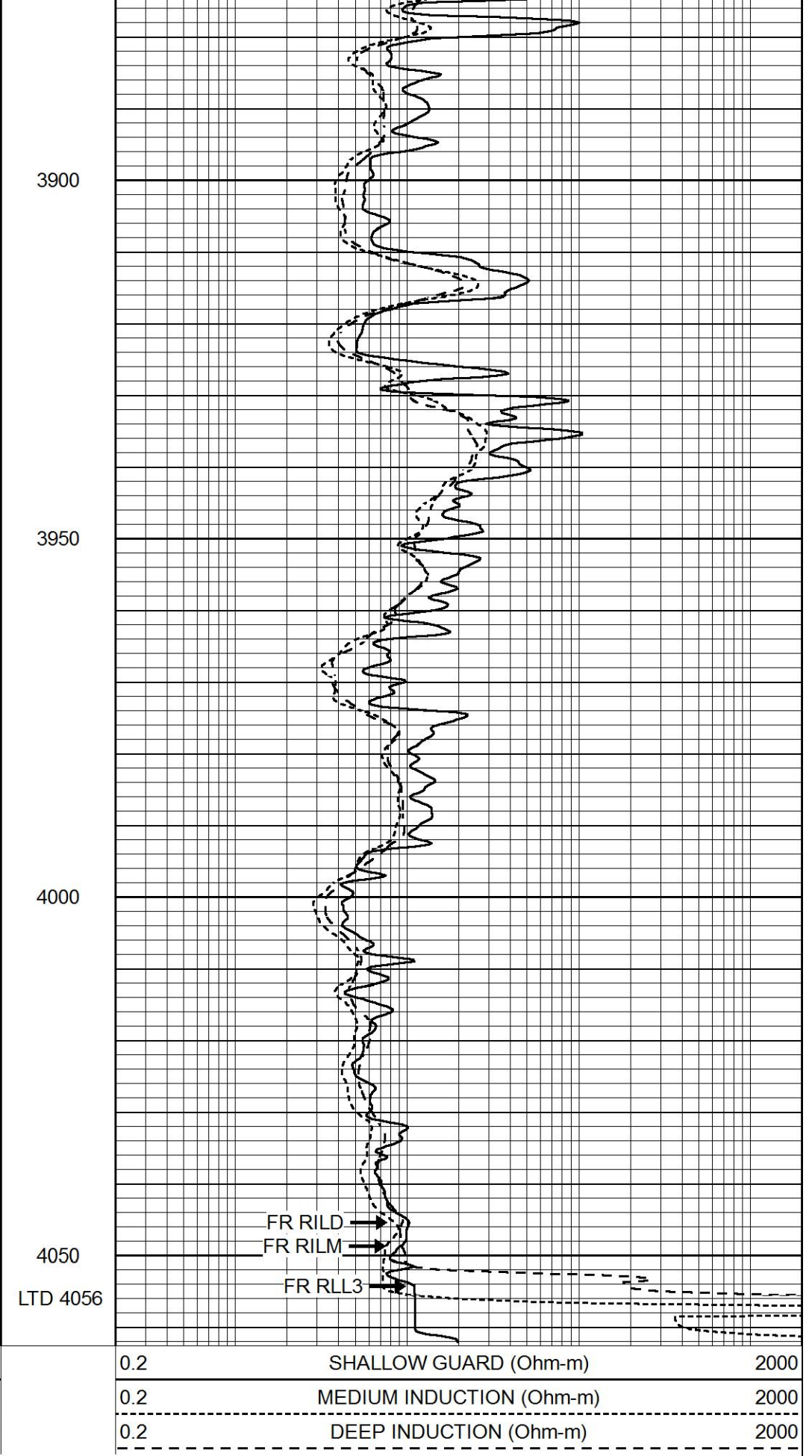
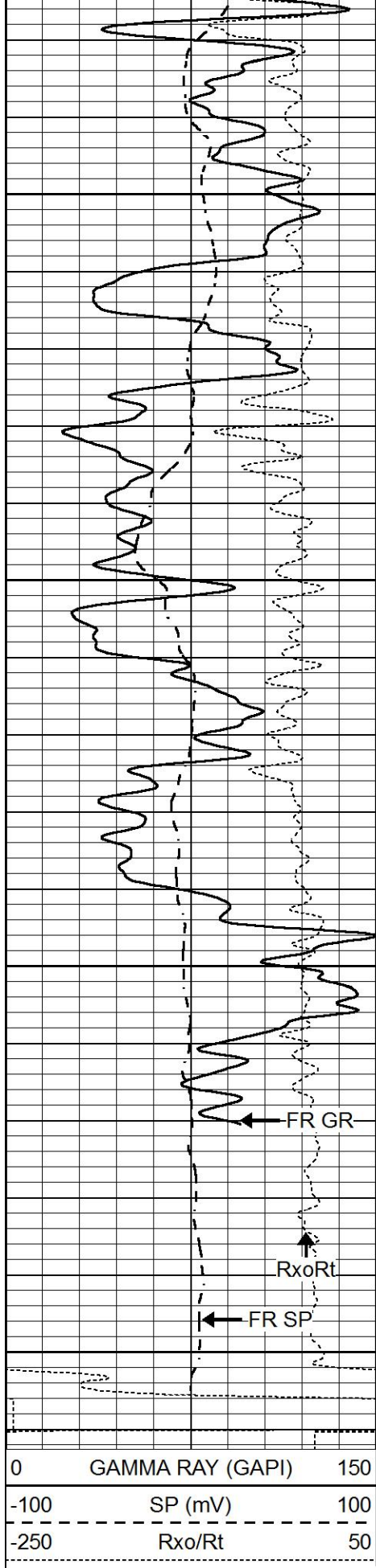
3700

3750

3800

3850



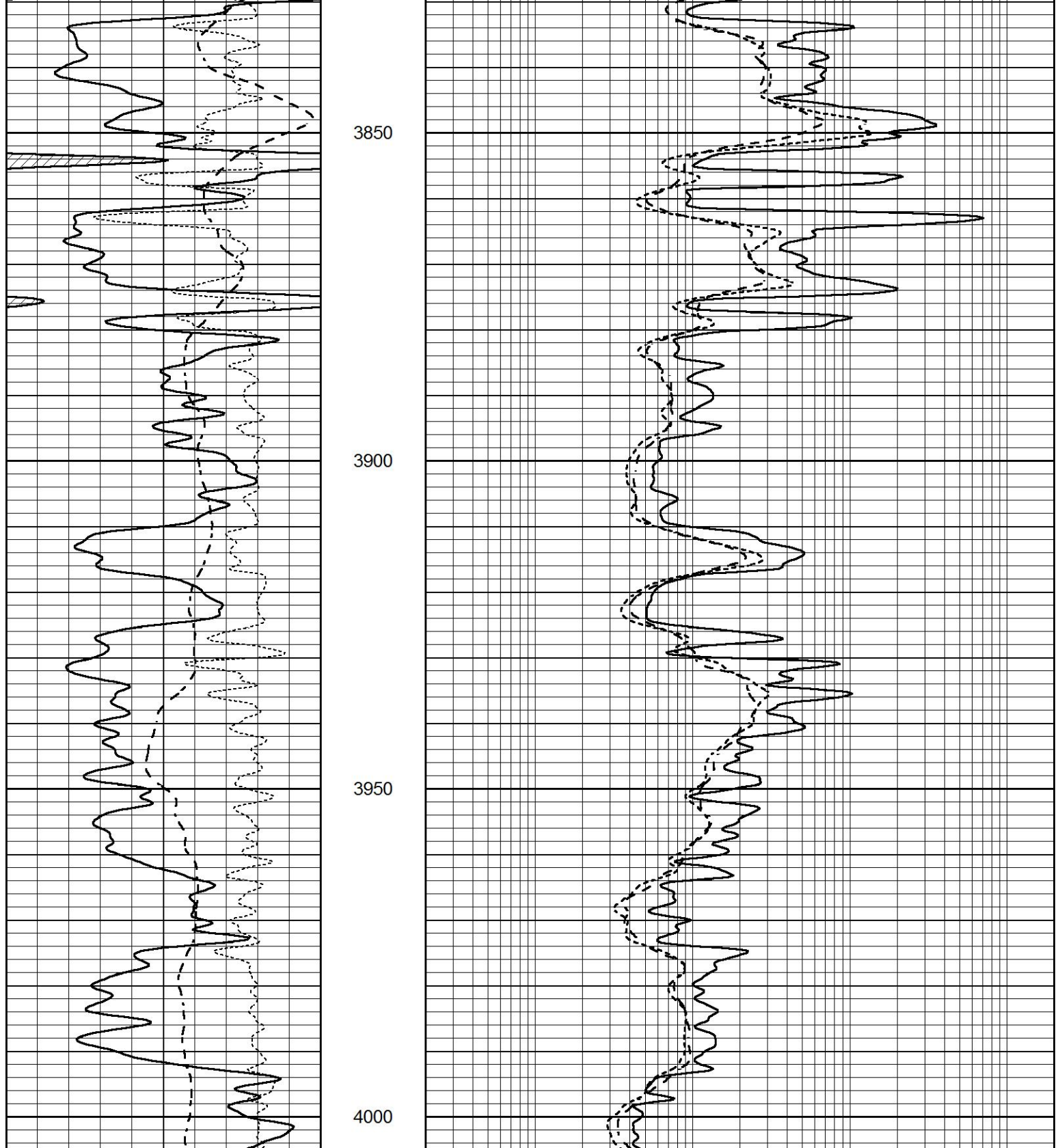


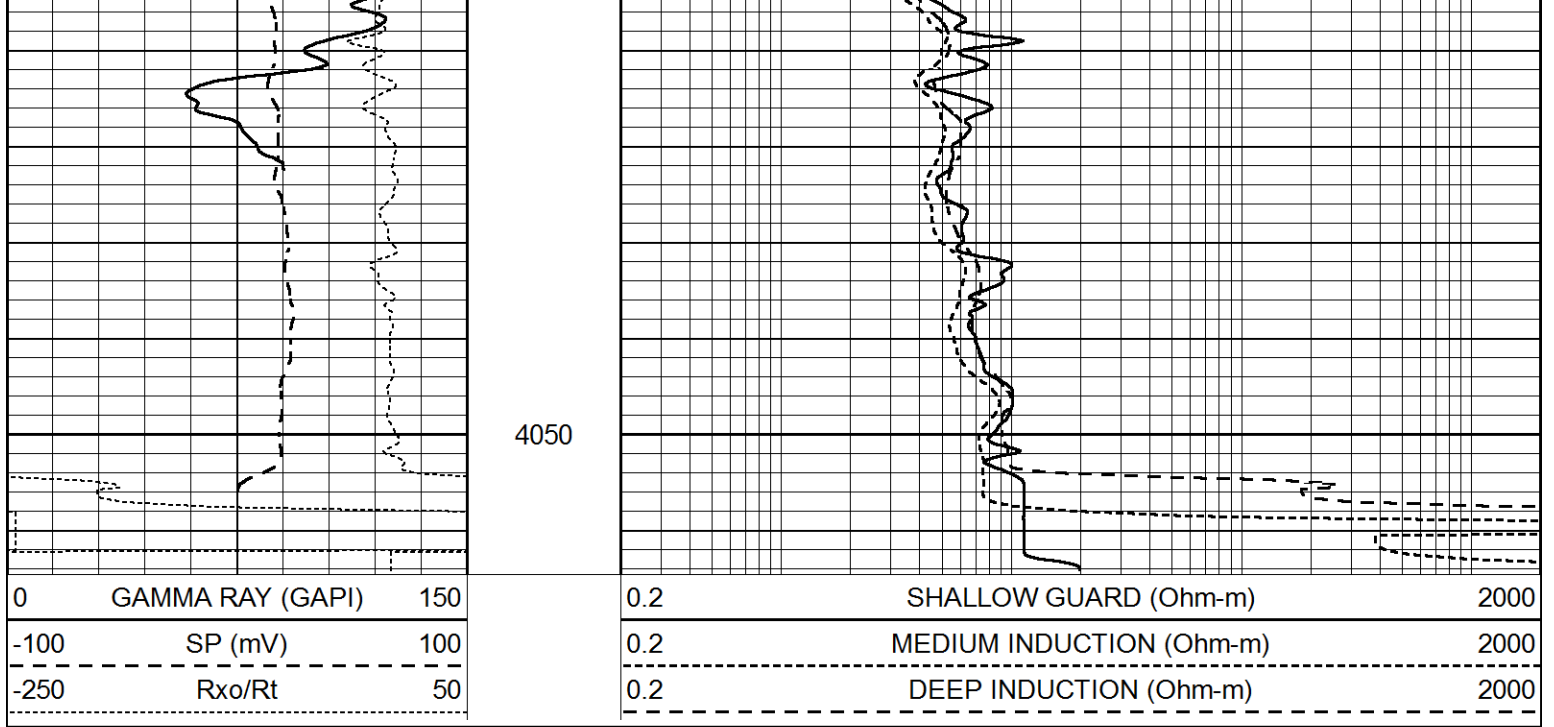
REPEAT SECTION

REFLECT SECTION

Database File 4736pe.db
 Dataset Pathname pass2.1
 Presentation Format _dil
 Dataset Creation Mon May 18 20:01:14 2020
 Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150		0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100		0.2	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50		0.2	DEEP INDUCTION (Ohm-m)	2000





Calibration Report

Database File 4736pe.db
 Dataset Pathname pass3.1
 Dataset Creation Mon May 18 20:03:27 2020

Dual Induction Calibration Report

Serial-Model: FW1410-55-Probe
 Surface Cal Performed: Tue Feb 19 11:44:18 2019
 Downhole Cal Performed: Tue Feb 19 11:44:24 2019
 After Survey Verification Performed: Tue Feb 19 11:44:27 2019

Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop	V	Air	Loop	mmho/m	m	b
Deep	0.011	0.656	V	1.000	400.000	mmho/m	618.595	-5.524
Medium	-0.000	0.731	V	1.000	464.000	mmho/m	632.856	1.197
Internal:	Zero	Cal	V	Zero	Cal	mmho/m	m	b
Deep	0.007	0.649	V	0.000	400.000	mmho/m	623.784	-4.595
Medium	0.004	0.743	V	0.000	464.000	mmho/m	627.284	-2.251

Downhole Calibration

	Readings			References			Results	
	Zero	Cal	V	Zero	Cal	mmho/m	m'	b'
Deep	-0.824	395.917	V	-0.976	397.550	mmho/m	1.004	-0.149
Medium	3.565	471.327	V	3.468	471.590	mmho/m	1.001	-0.099
LL3		7.503	V		1500.000	Ohm-m		
		0.001	V		20.000	Ohm-m		
		-7.481	V		3745.000	mmho-m		

After Survey Verification

	Readings			Targets			Results	
	Zero	Cal	mmho/m	Zero	Cal	mmho/m	m'	b'
Deep	0.000	0.000	mmho/m	-0.824	395.917	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	3.565	471.327	mmho/m	1.000	0.000

LL3	0.000	Ohm-m	1500.000	Ohm-m
	0.000	Ohm-m	20.000	Ohm-m
	0.000	mmho-m	3745.000	mmho-m

Compensated Neutron Calibration Report

Serial Number:	080621PMC
Tool Model:	NABORS

PRE-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number:	7	
Tool Model:	Probe1	
Performed:	Tue Dec 10 10:02:55 2019	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.4800	GAPI/cps