

HALLIBURTON

RESERVOIR
MONITORING TOOL
ELITE

Company

URSA OPERATING COMPANY LLC

Well

MONUMENT RIDGE B 44D-08-7-95

Field

PARACHUTE

County

GARFIELD

State

CO

Company

URSA OPERATING COMPANY LLC

Well

MONUMENT RIDGE B 44D-08-7-95

Field

PARACHUTE

County

GARFIELD

State

CO

API No.: 05045229170000

Serv #: 903682890

Other Services

Location: SHL: 970' FSL & 144' FEL
BHL: 245' FSL & 644' FEL

RMT-I

Permanent Datum

GROUND LEVEL

Elevation

5702'

Elevation

Log Measured From

KB

17' Ft. above perm. datum

K.B. 5719'
D.F. 5719'
G.L. 5702'

Drilling Measured From

KB

Date @ Time Logged

28 NOV 2016 @ 21:35

Type Fluid in Hole

FRESH WATER

Run No.

ONE

Density of Fluid

8.4 PPG

Depth - Driller

7132'

Fluid Level

SURFACE

Depth - Logger

6889'

Cement Top Est. Logged

2380'

Bottom - Logged Interval

6852'

Equipment / Location

11808537 / RS. WY

Top - Log Interval

3230'

Recorded by

P. DIMPFL

Max. Recorded Temp.

224 degF

Witnessed by

R. TOLLE

CEMENTING DATA

Surface

Protection

Production

Liner

Date / Time Cemented

String

String

String

N/A

Primary / Squeeze

N/A

N/A

N/A

N/A

Expected Compressive Strength

N/A

psi@ N/A hrs

N/A

psi@ N/A hrs

N/A

psi@ N/A hrs

Cement Volume

N/A

N/A

N/A

N/A

N/A

N/A

Cement Type / Weight

N/A

/ N/A

N/A

/ N/A

N/A

/ N/A

Formulation

N/A

N/A

N/A

N/A

N/A

N/A

Mud Type / Mud Wgt.

N/A

/ N/A

N/A

/ N/A

N/A

/ N/A

Borehole Record

Casing & Tubing Record

Run Number

Bit

From

To

Size

Weight

From

To

ONE

24"

SURFACE

60'

16"

75.5 #

SURFACE

60'

TWO

12.25"

60'

1726'

8.625"

32.0 #

SURFACE

1726'

THREE

7.875"

1726'

7132'

4.5"

11.6 #

SURFACE

7132'

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HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

Comments

ESTIMATED TOP OF CEMENT : 2380'
GAMMA BLANKET : 408 GAPI
FREE PIPE CALIBRATION DEPTH : 358'THANK YOU FOR CHOOSING HALLIBURTON ENERGY SVCS.
YOUR CREW TODAY: P. DIMPFL, T. HOWELL, B. RICHARDSON

Service Ticket No. 903682890

API No. 05045229170000

PGM Ver 15.10.29001

The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client

EQUIPMENT DATA

XHU		GAMMA		RMTI		CBL	
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	12146425	Serial No.	11224503	Serial No.	12095949	Serial No.	12091451
Model No.	XHU-3	Model No.	TTTC-U2	Model No.	RMTI	Model No.	CBLM
Diameter	1 11/16"	Diameter	1 11/16"	Diameter	2.25"	Diameter	2.75"

LOGGING DATA

General Data

Pass	Depths		Well Head	Speed	Logging Run Comments
No	From	To	Pressure	Ft/Min	

No.	FROM	TO	Pressure	Temp				
ONE	3600'	3200'	0 PSI	20	REPEAT			
TWO	6889'	3230'	0 PSI	20	MAIN			
	GAMMA		SIGMA		AMPLITUDE			
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ONE	0	200	60	0	0	100		
TWO	0	200	60	0	0	100		
DIRECTIONAL INFORMATION								
Maximum Deviation			deg. @		KOP			

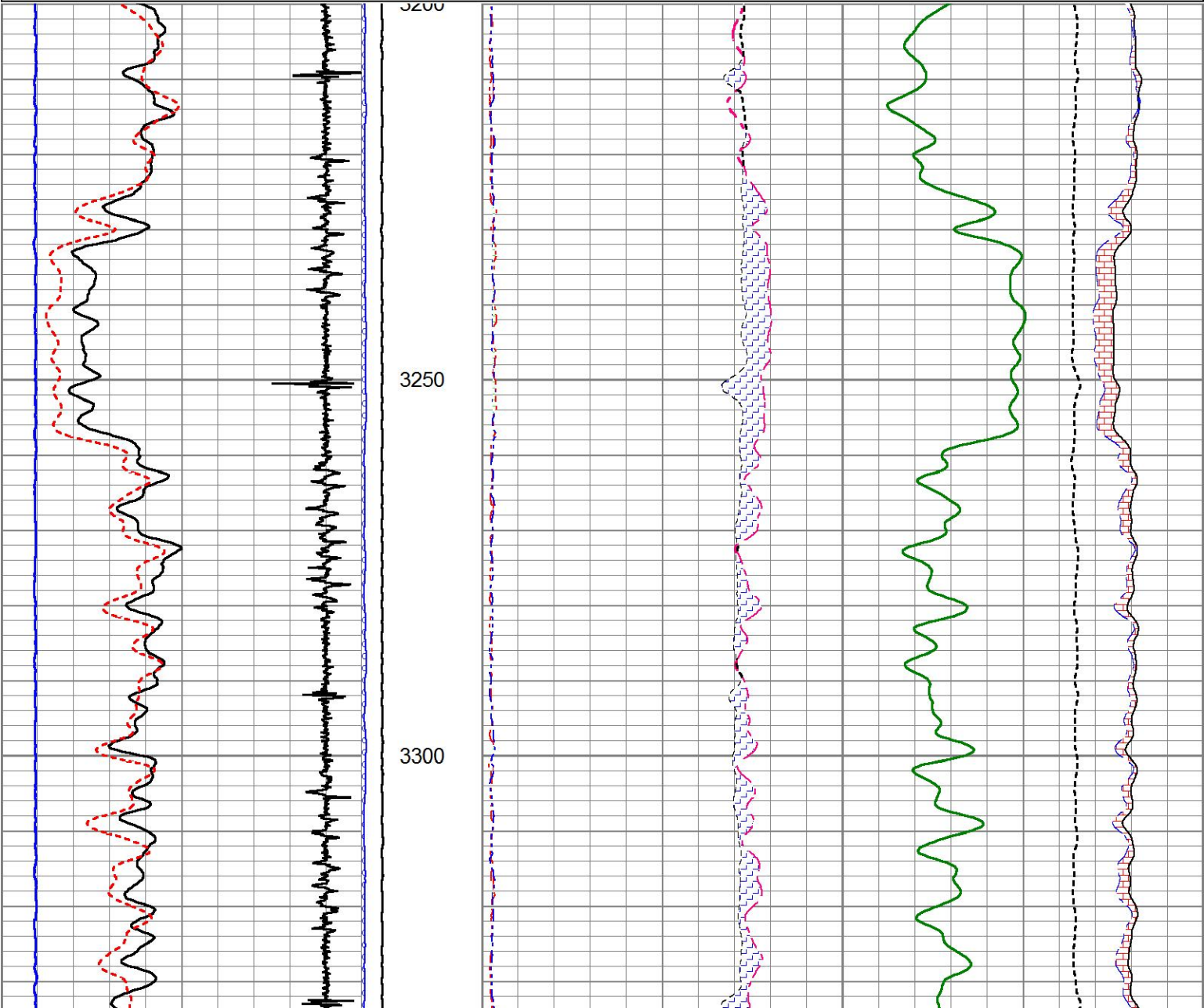
MAIN PASS

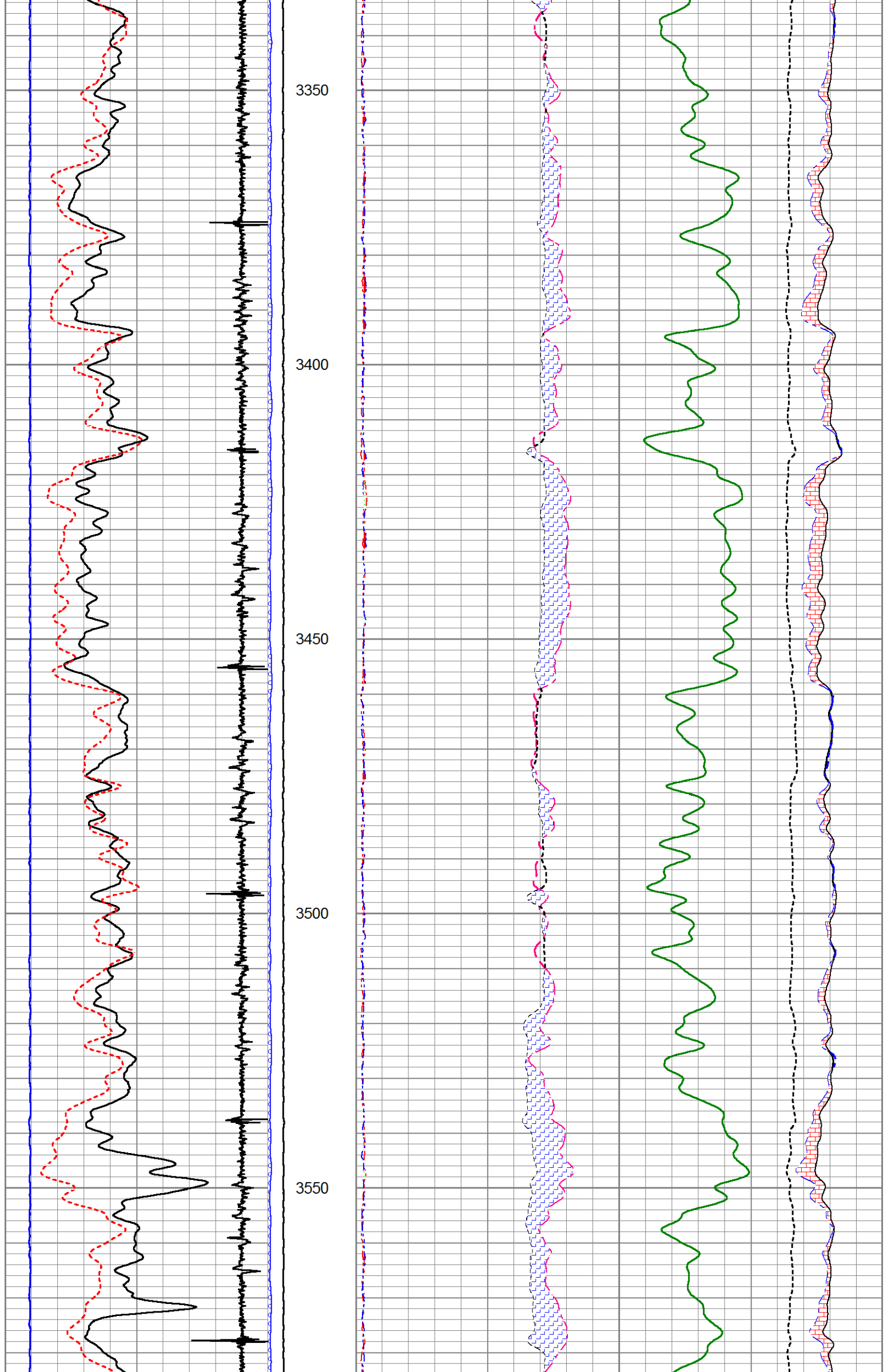
HALLIBURTON

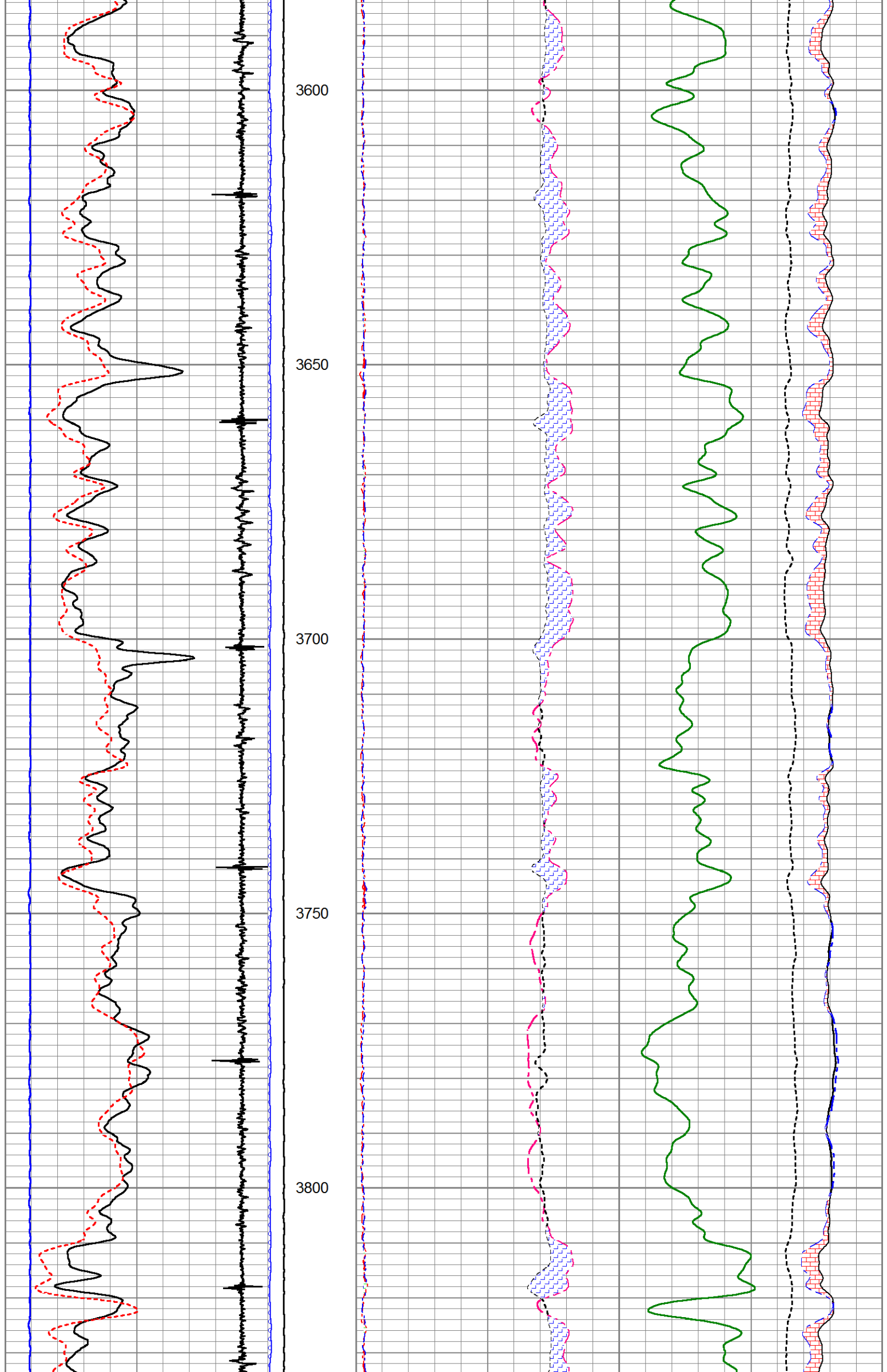
5" = 100'

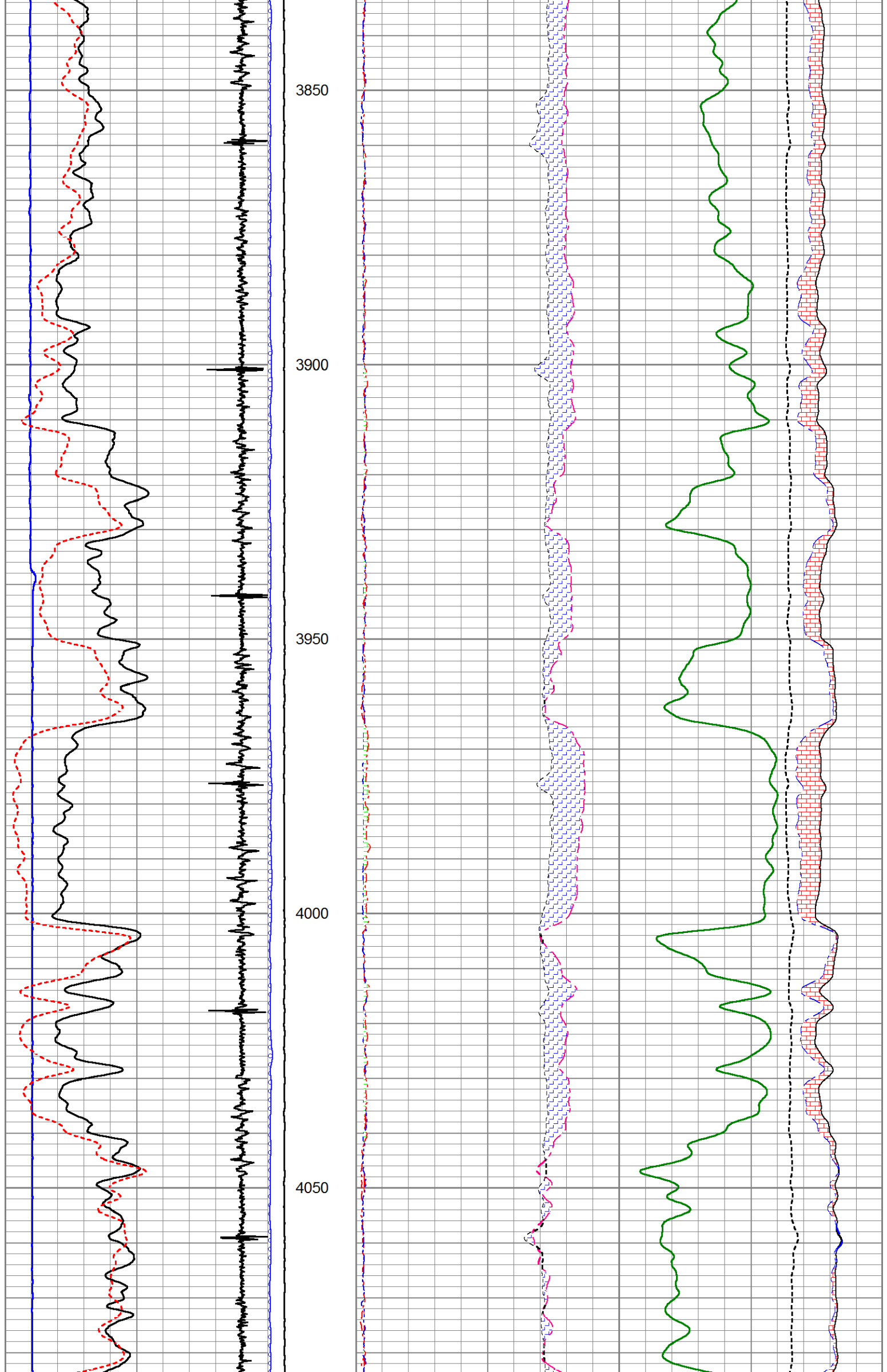
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Dataset Pathname merge2
Presentation Format !1!!rmt_rmti
Dataset Creation Tue Nov 29 11:38:30 2016
Charted by Depth in Feet scaled 1:240

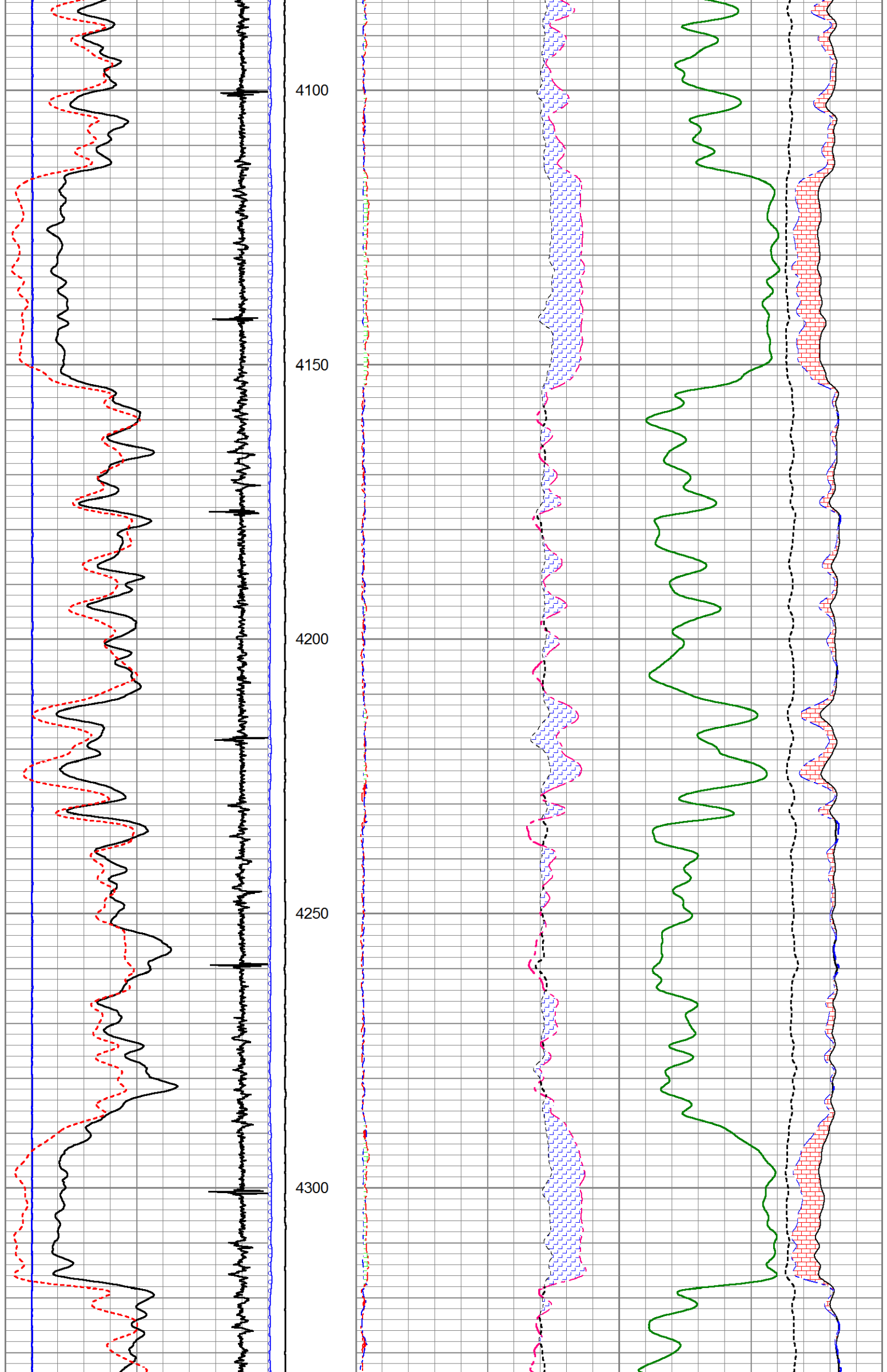
0	GR	200	LTEN	60	SGFF				0
2700	CCL	-300		0 (lb5000	2	RNF (Ratio Near/Far)	0.5	100000	FSIN
0	LSPD (ft/min)	200	0 OAI1100	1.65	RIN (Ratio Near/Far Incl)	0.65	60000	NCAP	0
10	SGINear	40		0	NFTR (Near Fit Error)	100	60000	FCAP	0
				0	FFTR (Far Fit Error)	100			

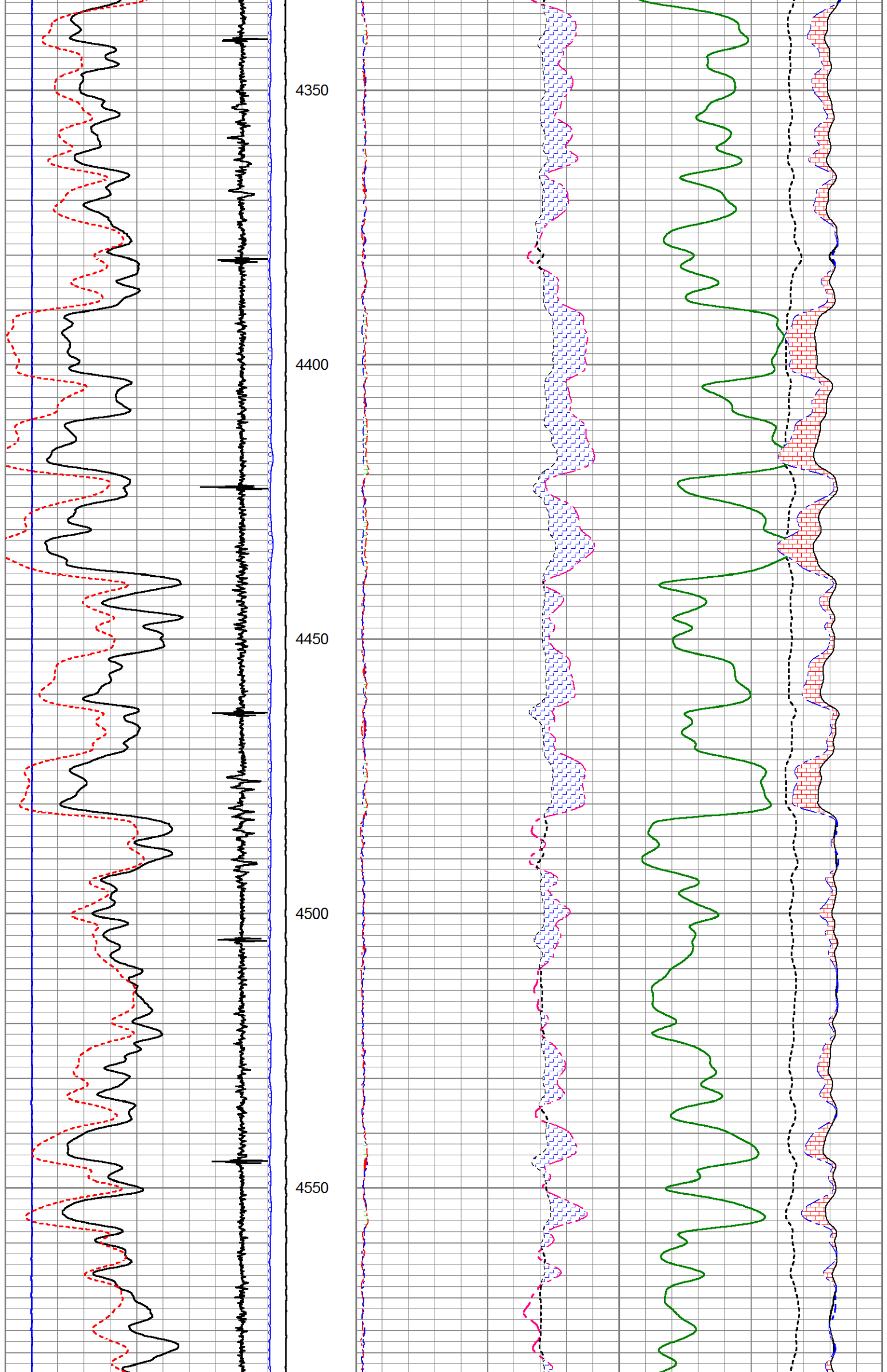


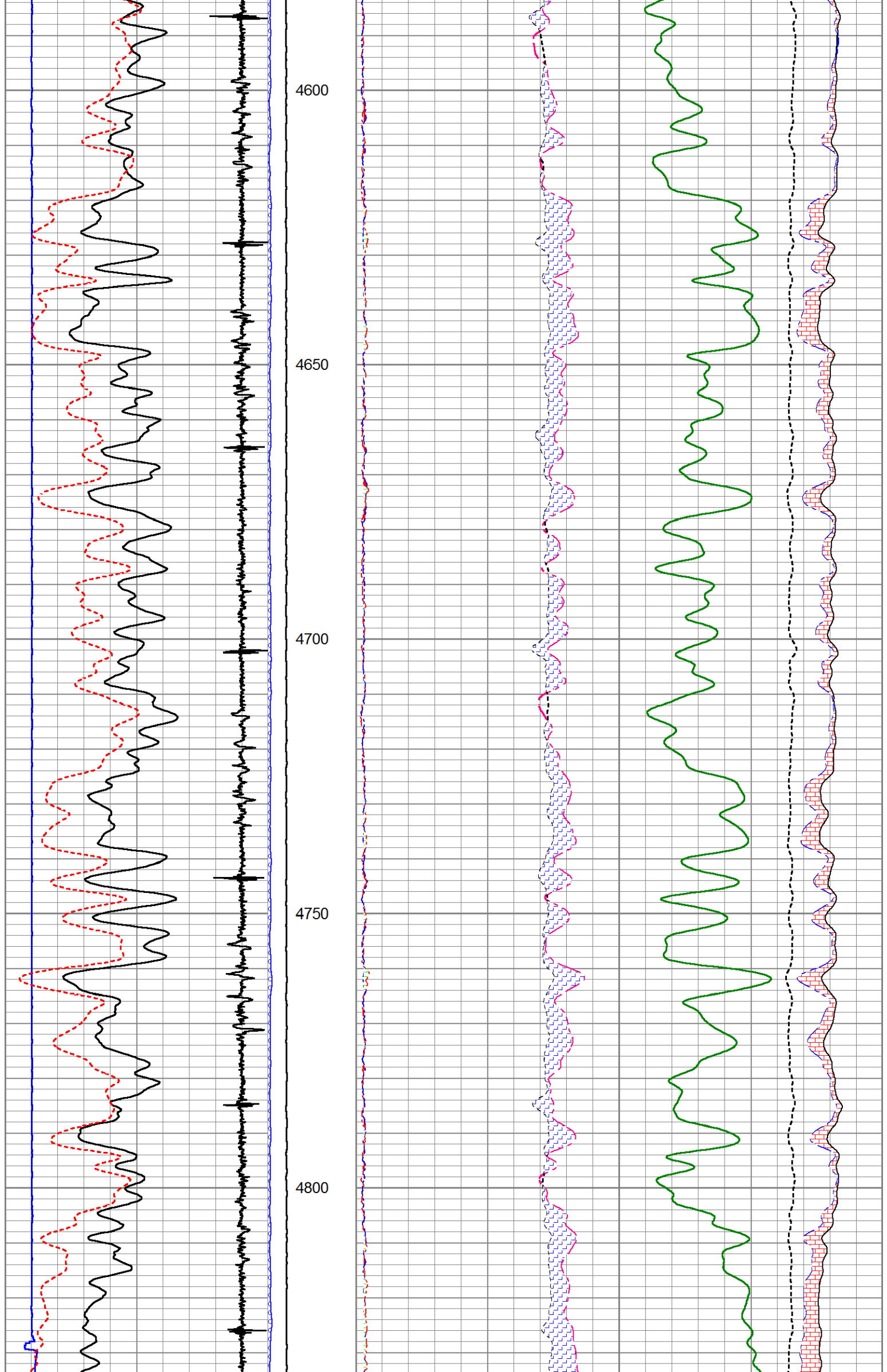


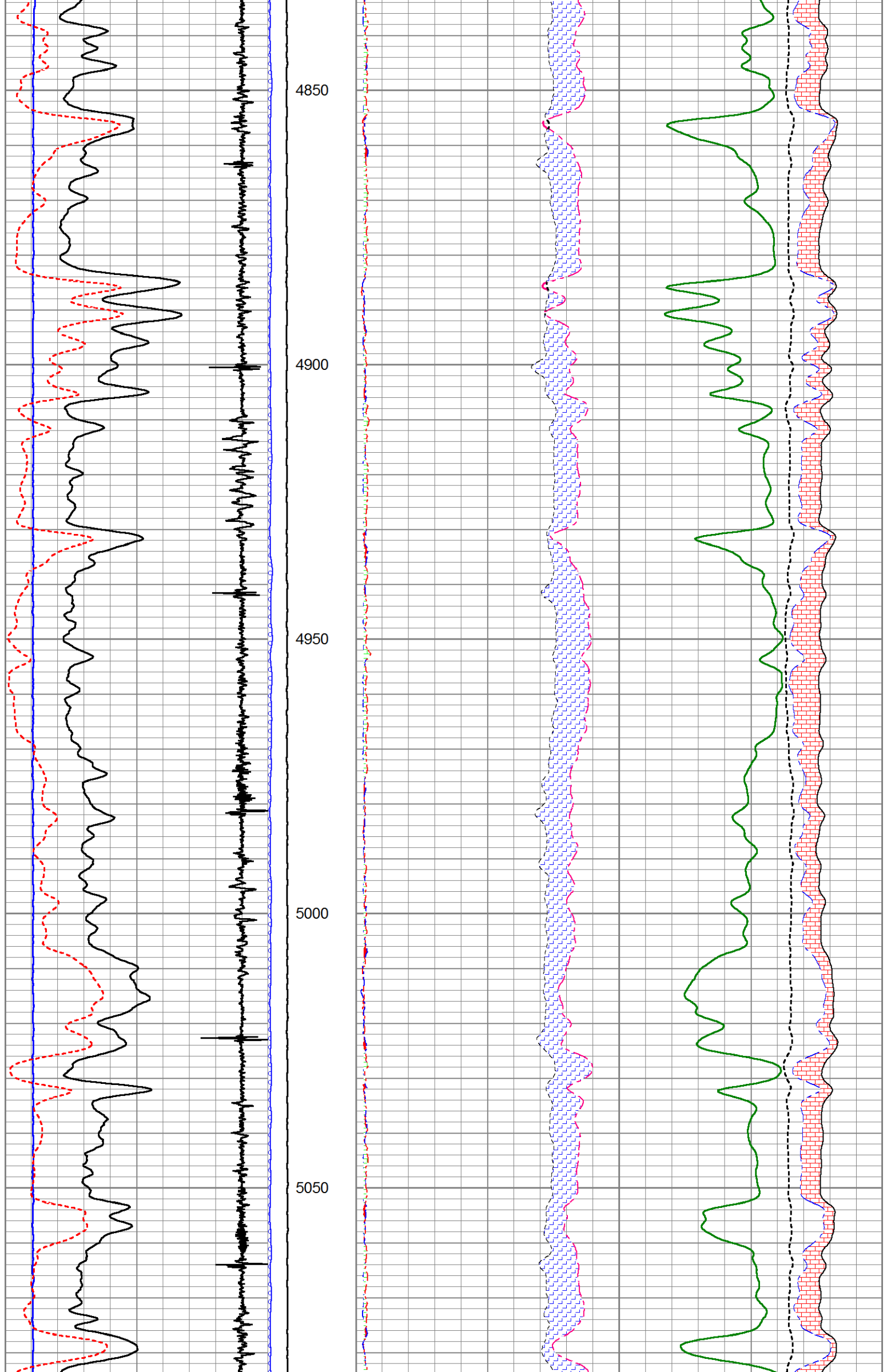


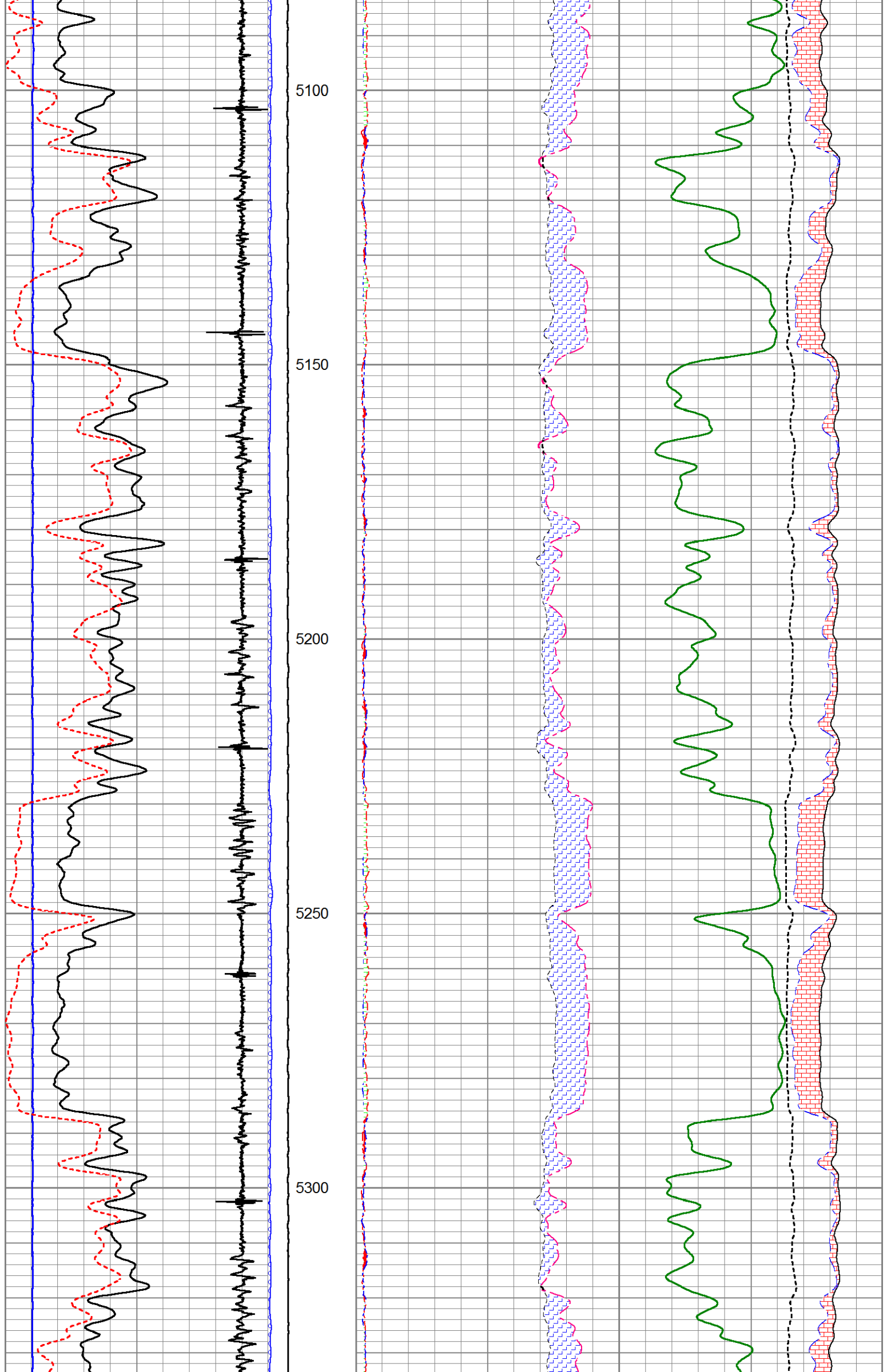


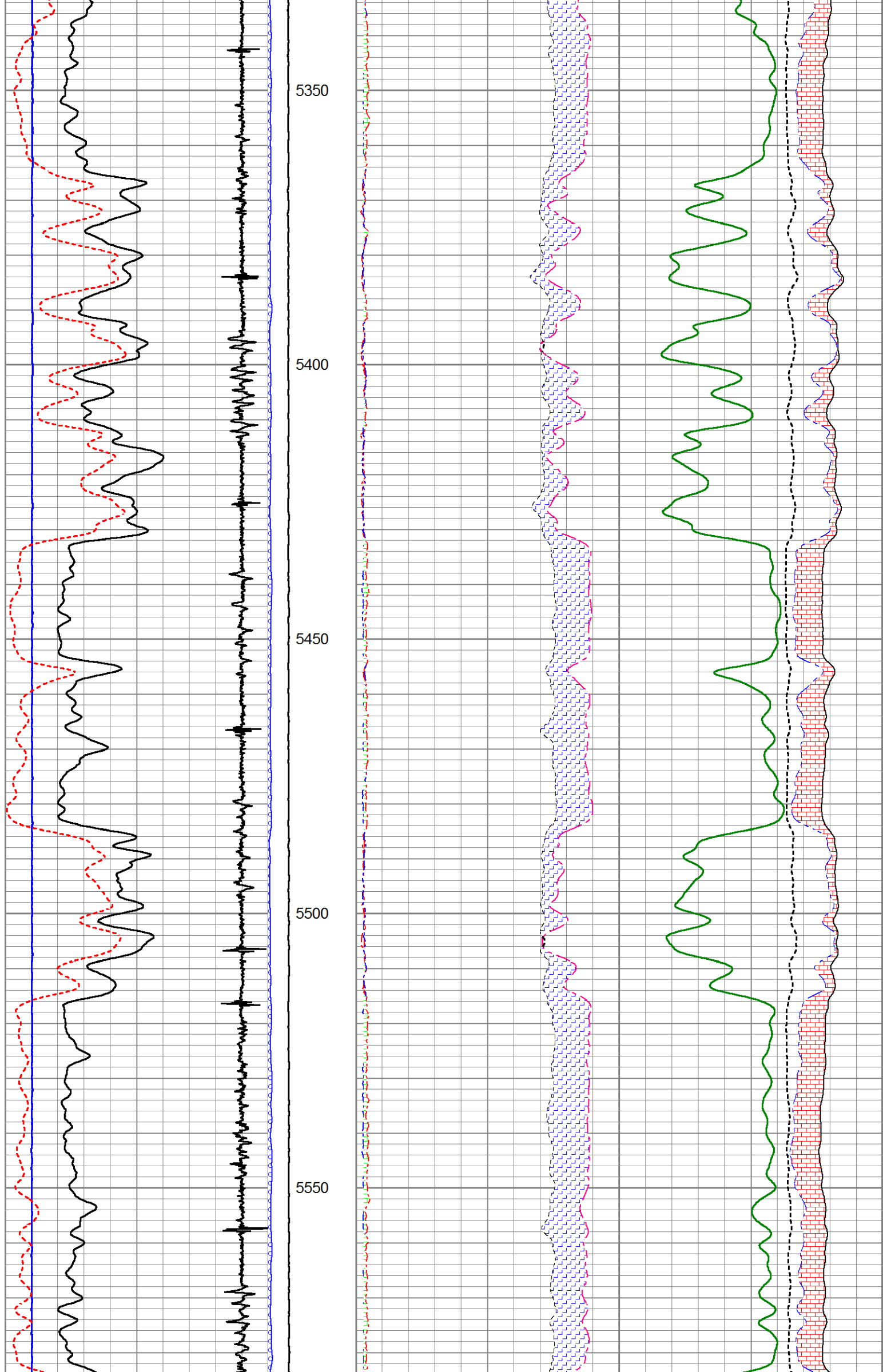


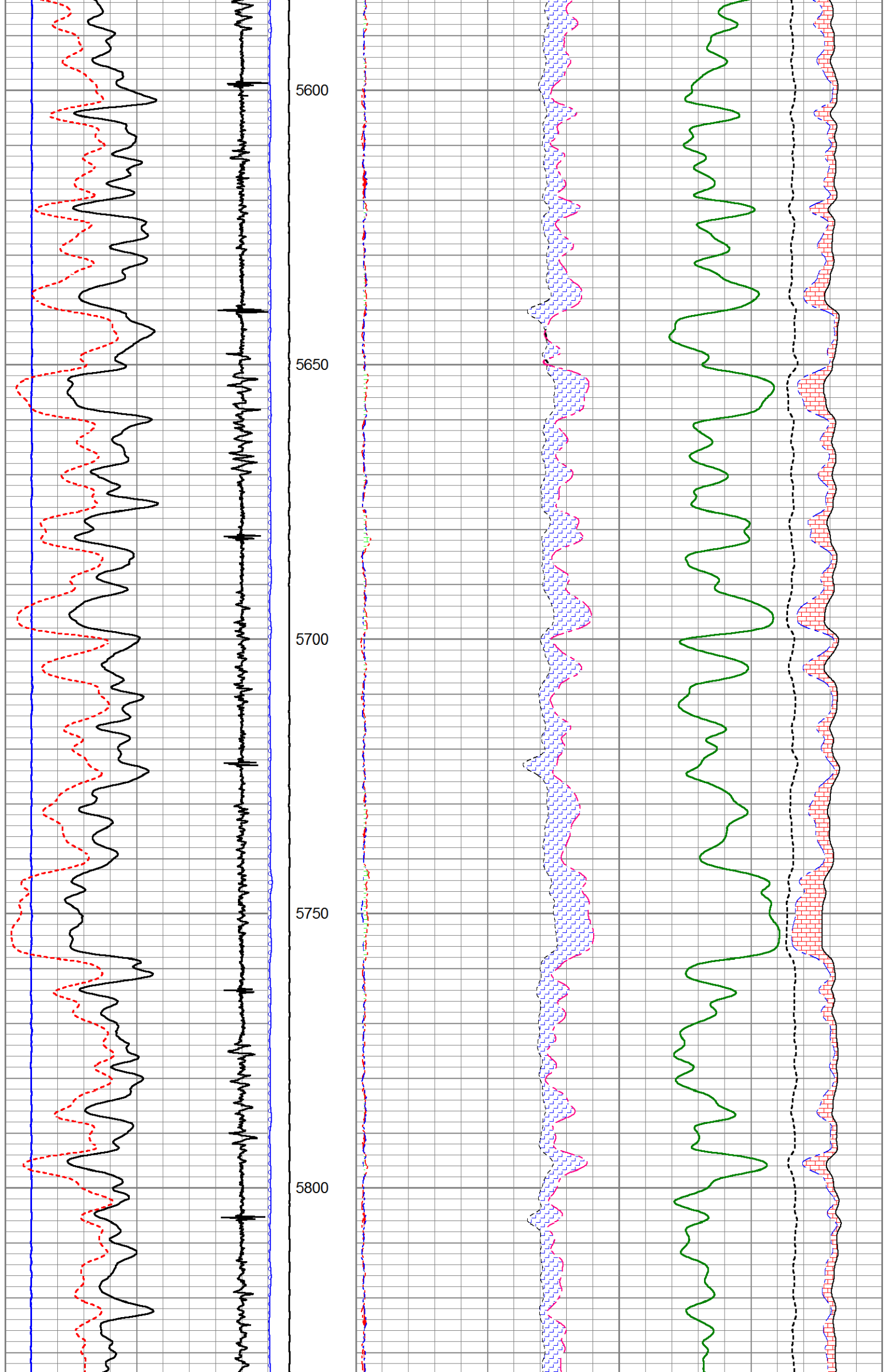


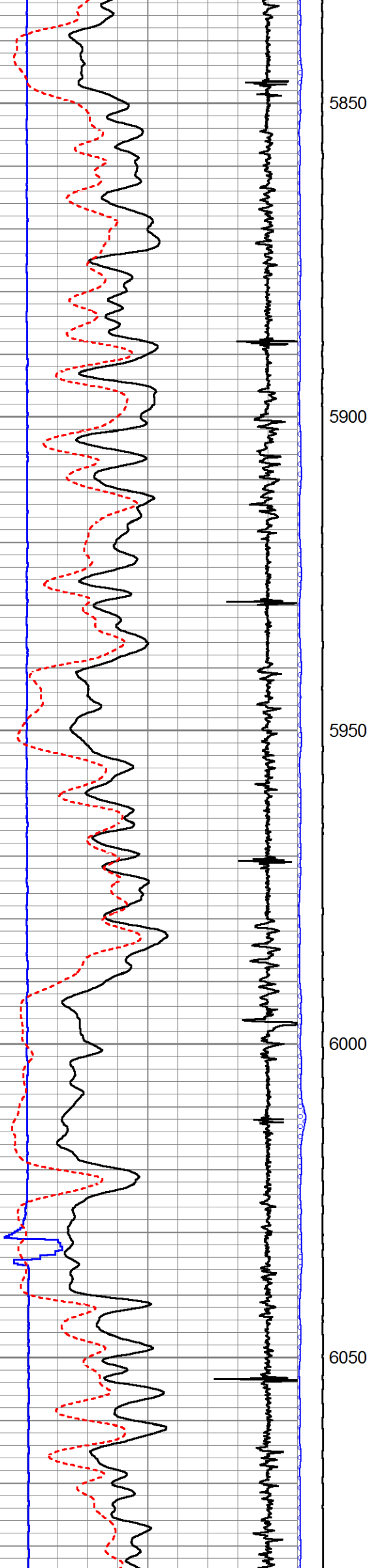












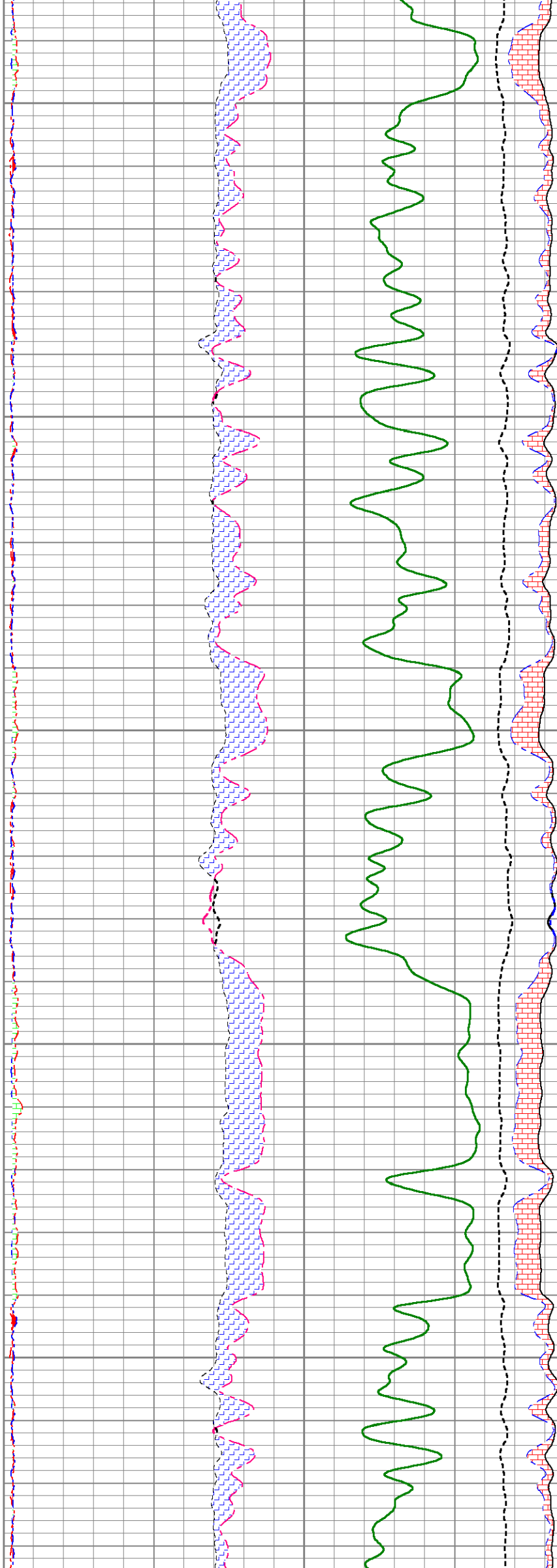
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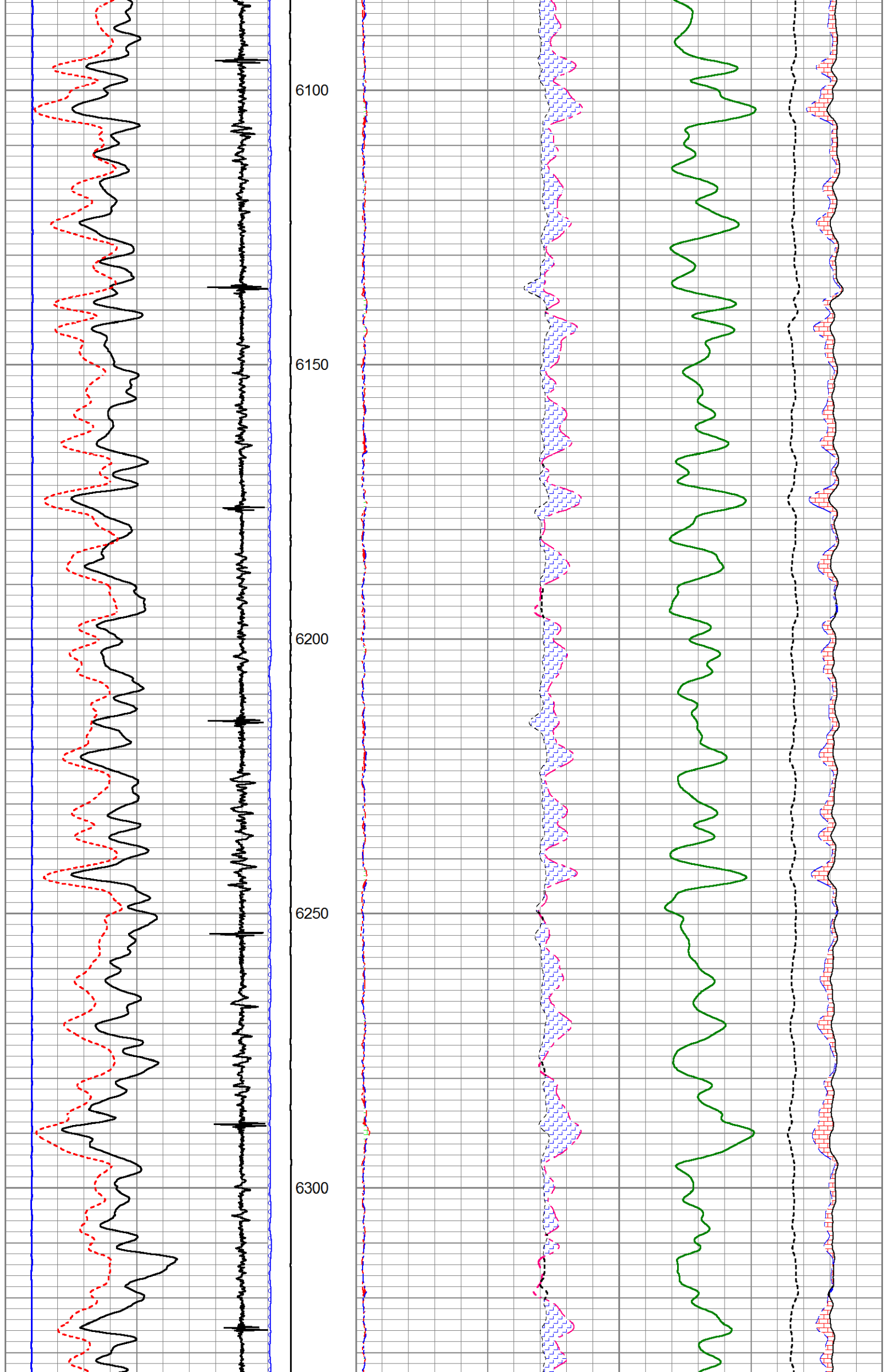
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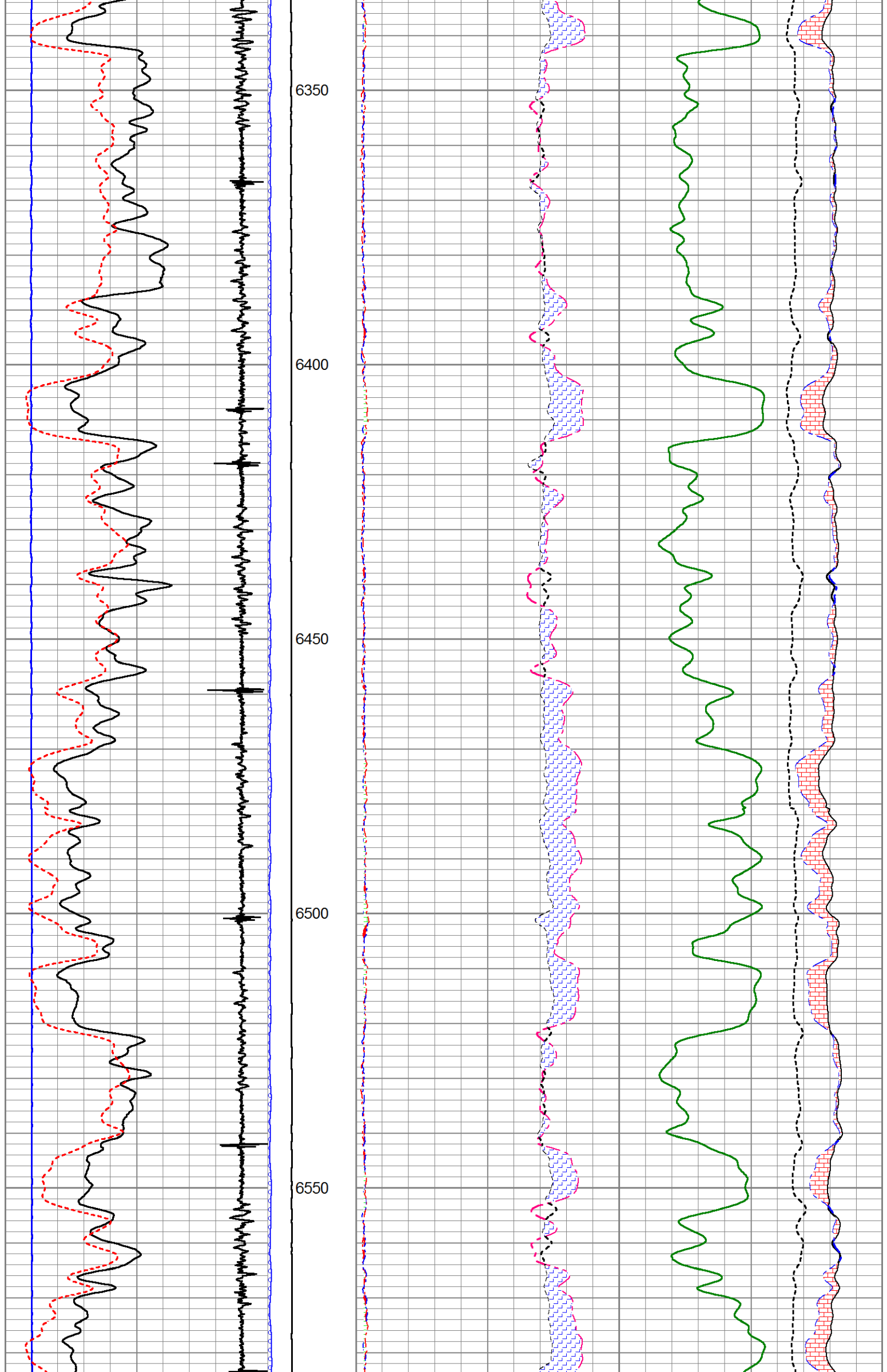
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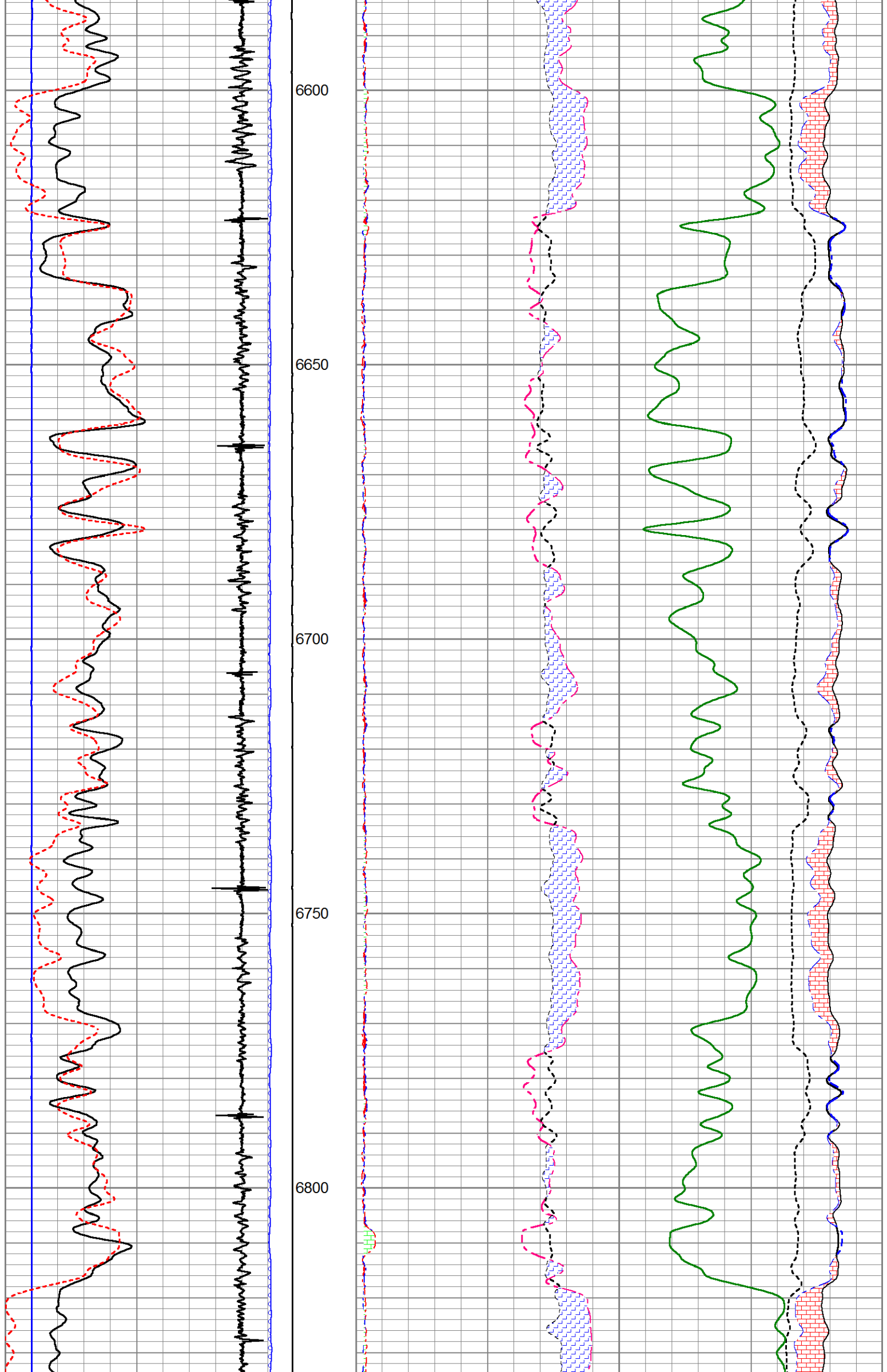
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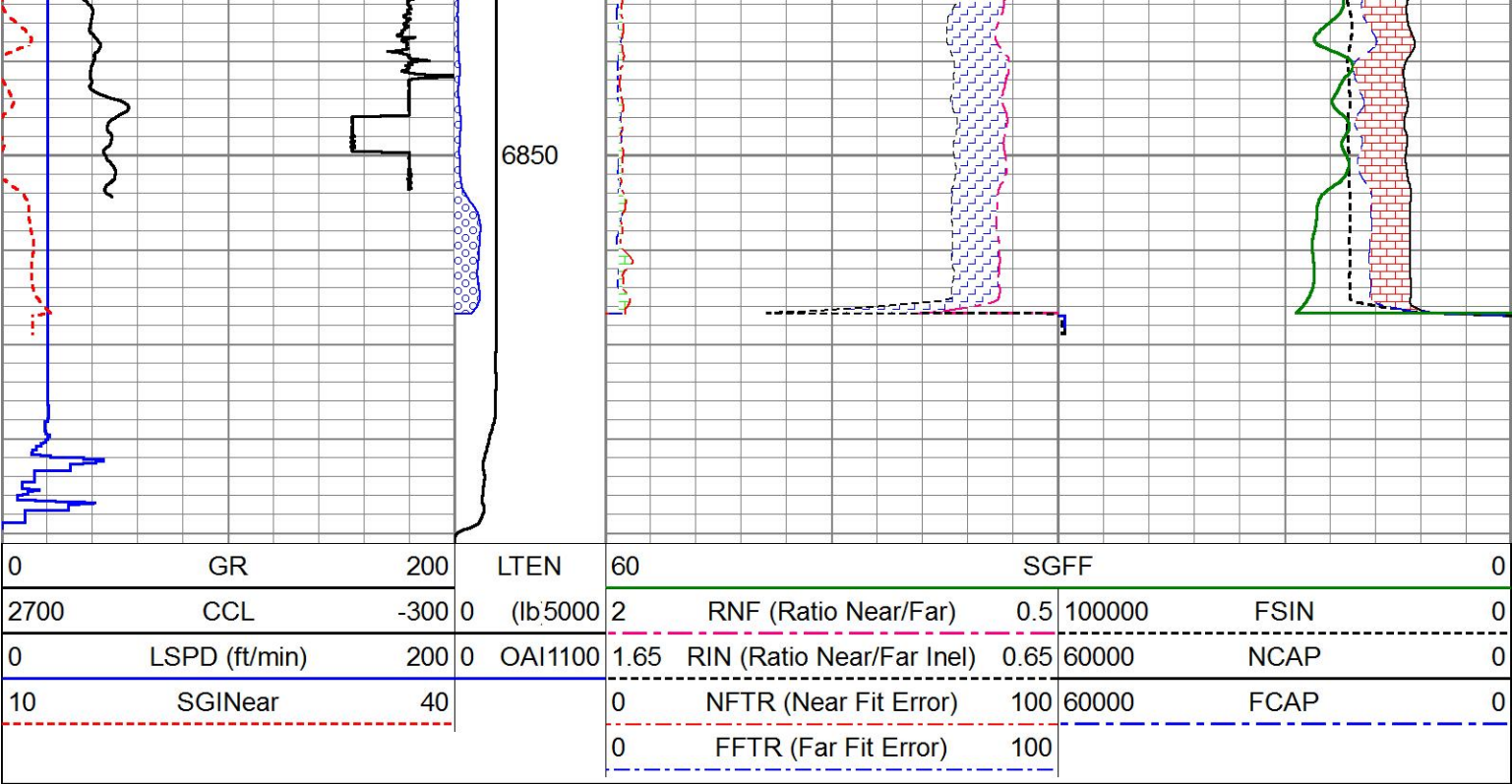
6050







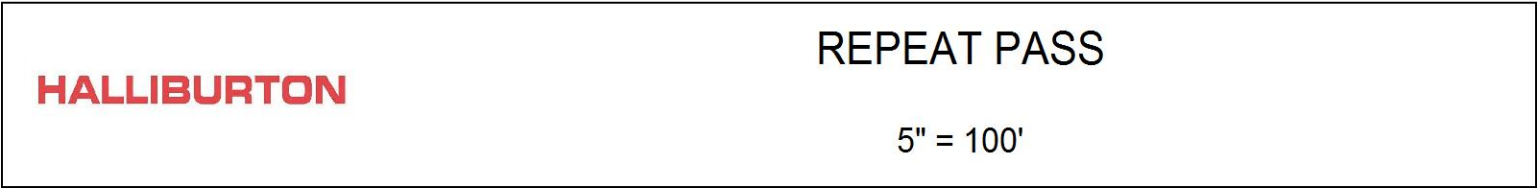




MAIN PASS

HALLIBURTON

5" = 100'

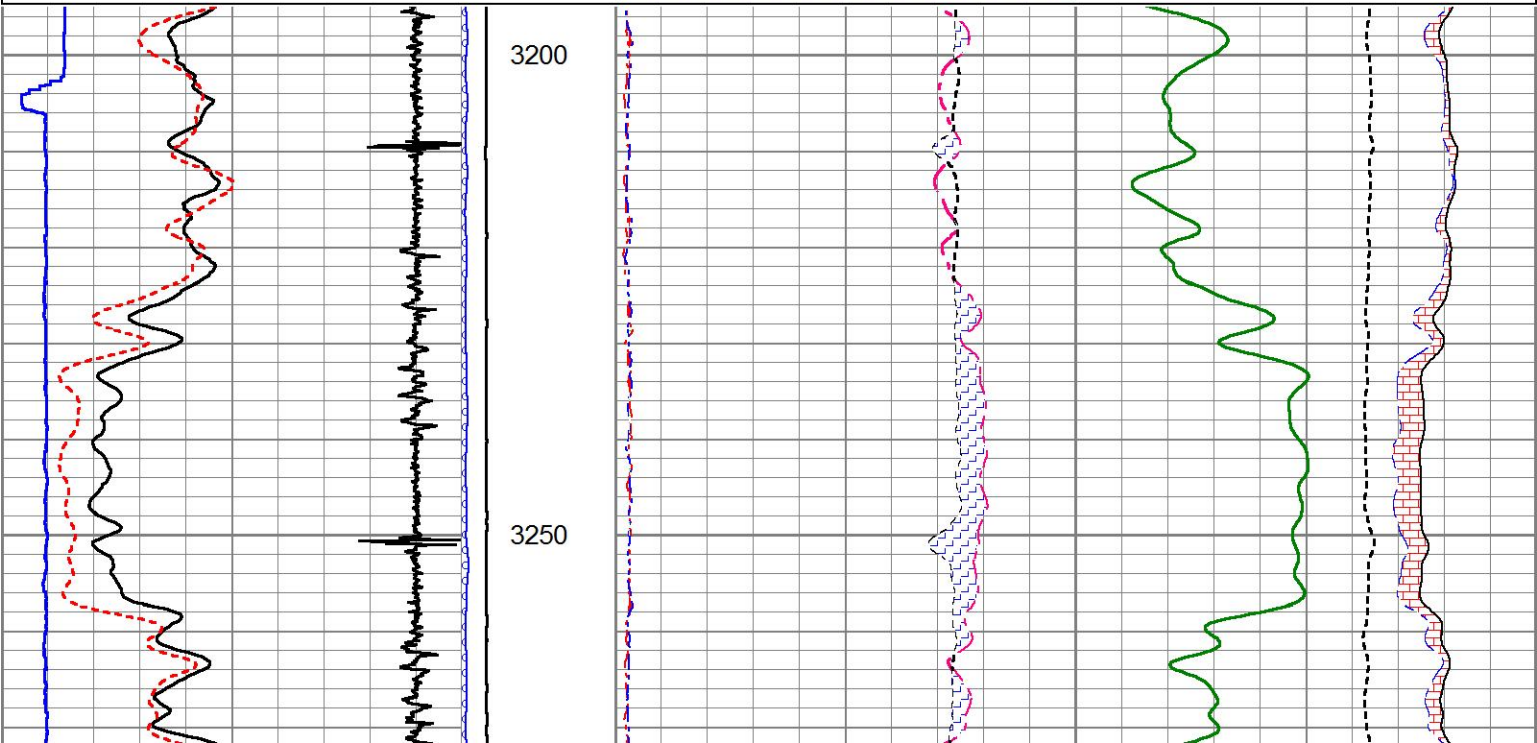
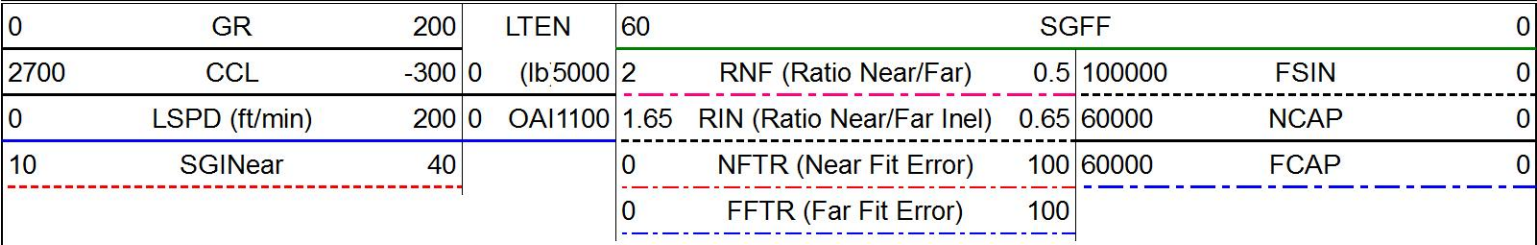


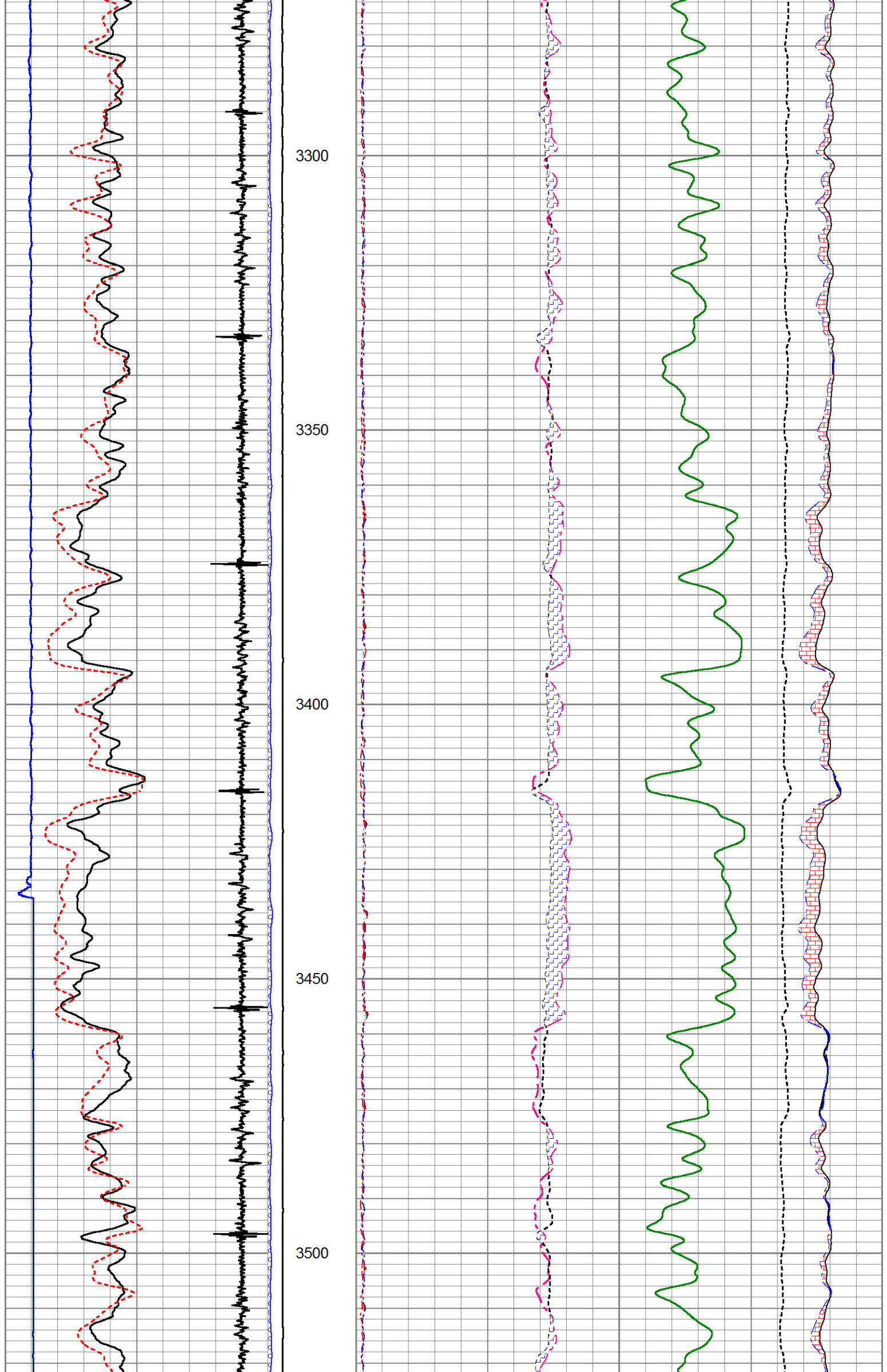
REPEAT PASS

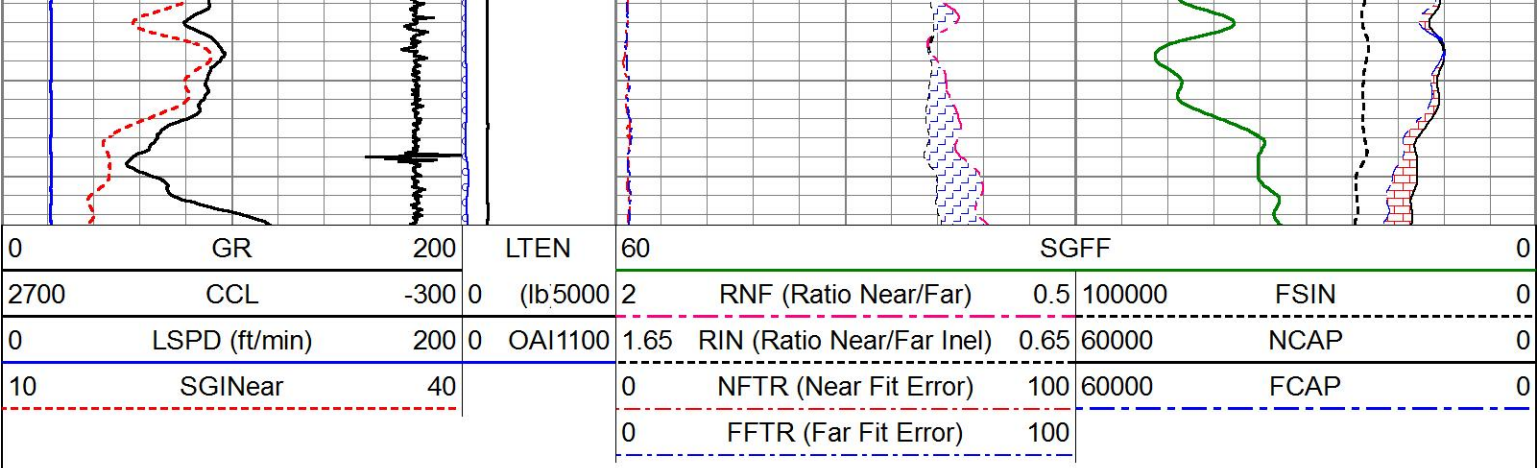
HALLIBURTON

5" = 100'

Database File	mr_b_44d_08_7_95.db
Dataset Pathname	REPEAT
Presentation Format	!1!!rmt_rmti
Dataset Creation	Mon Nov 28 20:44:49 2016
Charted by	Depth in Feet scaled 1:240







REPEAT PASS

HALLIBURTON

5" = 100'

Log Variables

DatabaseC:\ProgramData\Warrior\Data\mr_b_44d_08_7_95.db
Dataset field/well/run1/MAIN4/_vars_

Top - Bottom

BHSAL1	BHSAL2	BHTEMP_Src	BITSIZE	BORSAL	BOTTEMP	CASED?	CASEOD
1	0	TEMP	in 10	kppm 150	degF 210	Yes	in 4.5
CASETHCK	CASEWGHT	LTH	MAXAMPL	MINAMPL	MINATTN	MSGGN	MudWgt
in 0.25	lb/ft 11.6	Sandstone	mV 0	mV 1	db/ft 0.8	1	lb/gal 8.4
PERFS	POROS1	POROS2	PPT	RHOCF	SO	SRFTEMP	TDEPTH
0	1	0	usec 0	0.25	in 0	degF 30	ft 7100
UHSGC	USERFTT	ZREF					
NONE	usec/ft 0	MRayl 1.7					

Calibration Report

Database File mr_b_44d_08_7_95.db
Dataset Pathname MAIN4
Dataset Creation Tue Nov 29 04:52:16 2016

Cement Bond Log Shop Calibration Report

Serial-Model: 12091451-A
Calibration Performed: Mon Nov 28 11:51:11 2016

Free Pipe Calibration

TT	Measured	Units
Amplitude	244.4	usec
Log Base Line	560.6	mV
	7.4	mV

Calibration References and Gain

Name	Value	Units
Pipe O.D.	4.500	in
Pipe Weight	11.6	lb/ft
Pipe Ref. Amp.	81.2	mV
Amp. Gain	0.147	

Carbon/Oxygen Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	90.00	80.00	10.00	+/-15.00	V
ITCR2	3153	3250	-97	+/-250	cps

Near Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0259	5.51	<6.00
Fe	206	206 +/-2	0.0966	-----	-----
NGAIN = 0.996		NZOFF = 0.5			

Far Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0356	5.76	<6.50
Fe	210	208 +/-2	0.0903	-----	-----
FGAIN = 0.990		FZOFF = 0.5			

Flask Temperature50.0 degF

Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.45	0.45	-0.00	+/-0.02	
LIRI2	1.36	1.36	0.00	+/-0.05	
TCCR2	5059	5000	59	+/-1000	cps
ITCR2	3123	3200	-77	+/-250	cps

Sigma Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	90.00	80.00	10.00	+/-15.00	V
FCAP	9856	10000	-144	+/-500	cps

Horizontal Water Tank


Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.96	0.95	0.01		
N/F Inel Norm	0.62	0.61	0.01		
RNF	1.04	1.07	-0.03	+/-0.12	
RINC	1.61	1.64	-0.03	+/-0.18	
SGFN	24.07	24.00	0.07	+/-0.50	cu
SGFF	22.92	22.85	0.07	+/-0.50	cu
FSIN	23621	24000	-379	+/-2000	cps
FCAP	9956	10000	-44	+/-1000	cps
NFTR	0.82			<5.00	
FFTR	0.92			<5.00	
NBKG	190			<500	cps
FBKG	97			<500	cps
RTN	0.40	0.40	-0.00	+/-0.10	usec
RTF	0.42	0.40	0.02	+/-0.10	usec


Calibration Software Modules

HRMTI Module	2015.5.4.0
RMTI Module	2015.10.16.1

Log Data Acquisition Software Modules

HRMTI Module		2015.5.4.0			
RMTI Module		2015.10.16.1			
Gamma Ray Calibration Report					
Type / Serial:		002 / 11214503			
SHOP CALIBRATION		Wed Nov 09 16:25:32 2016			
	Counts/Sec.	Gain	Offset	Jig	Units
Background	34.1				cps
Calibrator	297.9				cps
		1.3950			GAPI/cps
PRIMARY VERIFICATION					
Background	42.3				cps
Calibrator	413.8				cps
Difference				371.5	GAPI
BEFORE SURVEY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI
AFTER SURVEY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
CCL	35.82		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
GR	33.56		TTTCU-002 (11214503) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
			XHU-003 (000001) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
RmtTFGT RmtTNGT	22.91 22.41		RMTI-A (12095949) Halliburton RMTI Tool	14.00	2.13	77.00

RmtFP5V	14.66		X-OVER-GoxSondex Go Box x Sondex Pin CrossOver	0.27	1.69	1.00
RmtNFwvMcsP1	14.66		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
RmtCommFWa	14.66					
Temp	9.57					
TT3FT	7.32		HCBLM-A (12091451) Halliburton HCBLM Tool	9.38	2.75	116.00
AMP3FT	7.32					
WVF5FT	6.36					
WVF3FT	2.84		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
			AUH-001 (11072111) Adaptor Ultrawire/Halliburton	0.38	1.69	3.00
LLMTEN	0.00		BUL-001 (000001) Bullnose	0.30	1.69	1.50
Dataset: mr_b_44d_08_7_95.db: field/well/run1/MAIN4 Total length: 39.39 ft Total weight: 356.50 lb O.D.: 3.13 in						

Company	URSA OPERATING COMPANY LLC		
Well	MONUMENT RIDGE B 44D-08-7-95		
Field	PARACHUTE		
County	GARFIELD	State	CO
HALLIBURTON	RESERVOIR MONITORING TOOL ELITE		