

HALLIBURTON

RESERVOIR  
MONITORING TOOL  
ELITE

Company

URSA OPERATING COMPANY LLC

Well

MONUMENT RIDGE B 24D-08-7-95

Field

PARACHUTE

County

GARFIELD

State

CO

Company

URSA OPERATING COMPANY LLC

Well

MONUMENT RIDGE B 24D-08-7-95

Field

PARACHUTE

County

GARFIELD

State

CO

API No.: 05045229080000

Serv #: 903681332

Other Services

Location: SHL: 960' FSL & 144' FEL  
BHL: 187' FSL & 1986' FEL

Sec: 8

Twp: 7S

Rge: 95W

CBL-M

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

29 NOV 2016 @ 06:45

Type Fluid in Hole

FRESH WATER

Run No.

ONE

Density of Fluid

8.4 PPG

Depth - Driller

8133'

Fluid Level

SURFACE

Depth - Logger

8018'

Cement Top Est. Logged

1620'

Bottom - Logged Interval

7992'

Equipment / Location

11808537 / RS. WY

Top - Log Interval

4027'

Recorded by

B. RIDDEL

Max. Recorded Temp.

218 degF

Witnessed by

R. TOLLE

CEMENTING DATA

Surface

Protection

Production

Liner

String

String

String

Date / Time Cemented

N/A

N/A

N/A

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"

1877'

8.625"

32.0 #

SURFACE

1877'

THREE

7.875"

1877'

8133'

4.5"

11.6 #

SURFACE

8133'

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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 : 1620'  
GAMMA BLANKET : 408 GAPI  
FREE PIPE CALIBRATION DEPTH : 425'

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SVCS.  
YOUR CREW TODAY: B. RIDDEL, DANIEL FLINDERS, BRAD BURDERER

Service Ticket No. 903681332

API No. 05045229080000

PGM Ver 15.10.29001

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

EQUIPMENT DATA

XHU

Run No.

ONE

Serial No.

12146425

Model No.

XHU-3

Diameter

1 11/16"

GAMMA

Run No.

ONE

Serial No.

11224503

Model No.

TTTC-U2

Diameter

1 11/16"

RMTI

Run No.

ONE

Serial No.

12095949

Model No.

RMTI

Diameter

2.25"

CBL

Run No.

ONE

Serial No.

11836468

Model No.

CBLM

Diameter

2.75"

LOGGING DATA

General Data

Pass

No

Depths

From

To

Well Head

Pressure

Speed

Ft/Min

Logging Run Comments

ONE	4450'	4250'	0 PSI	20	REPEAT			
TWO	7992'	4027'	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			

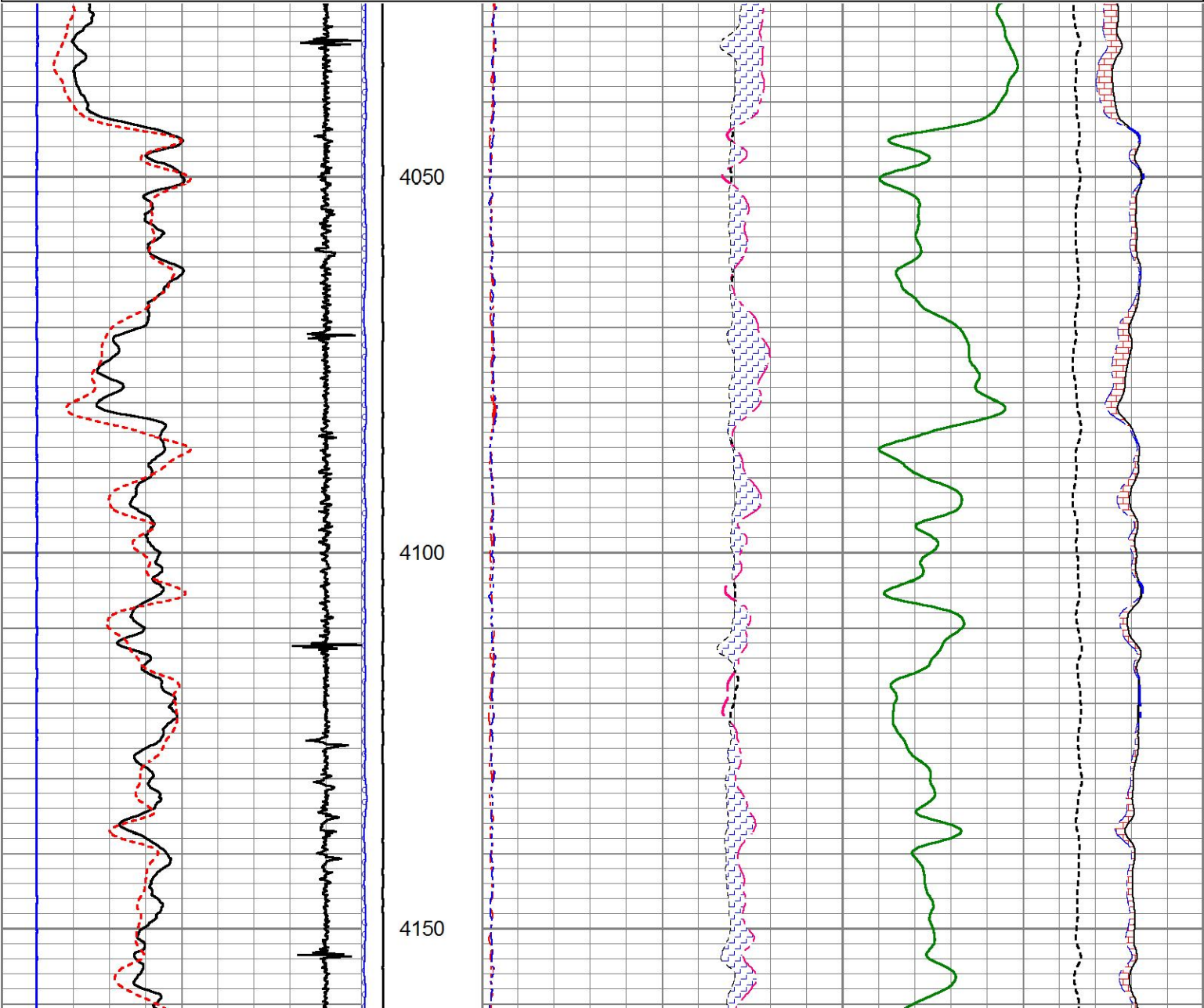
MAIN PASS

HALLIBURTON

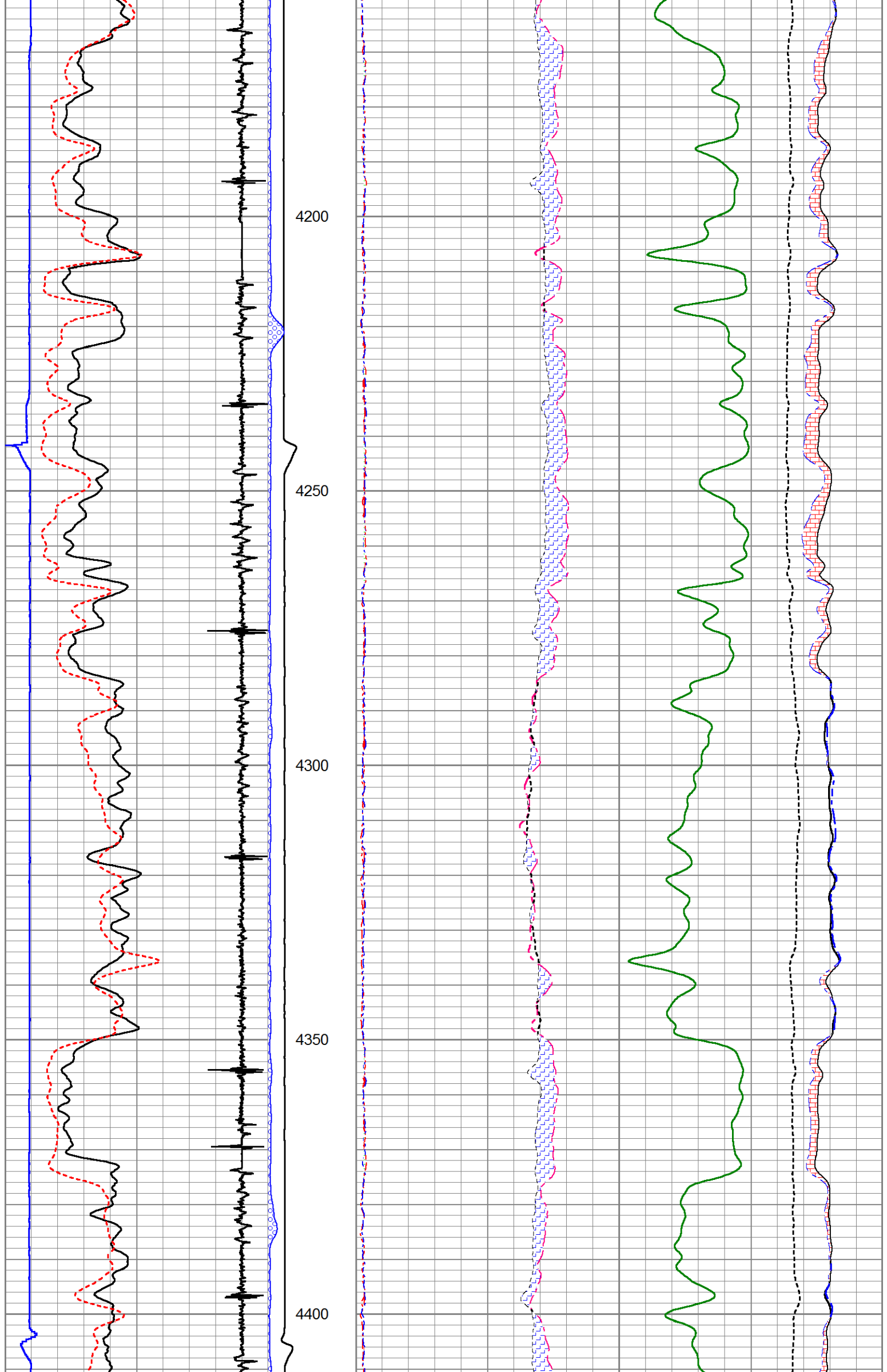
5" = 100'

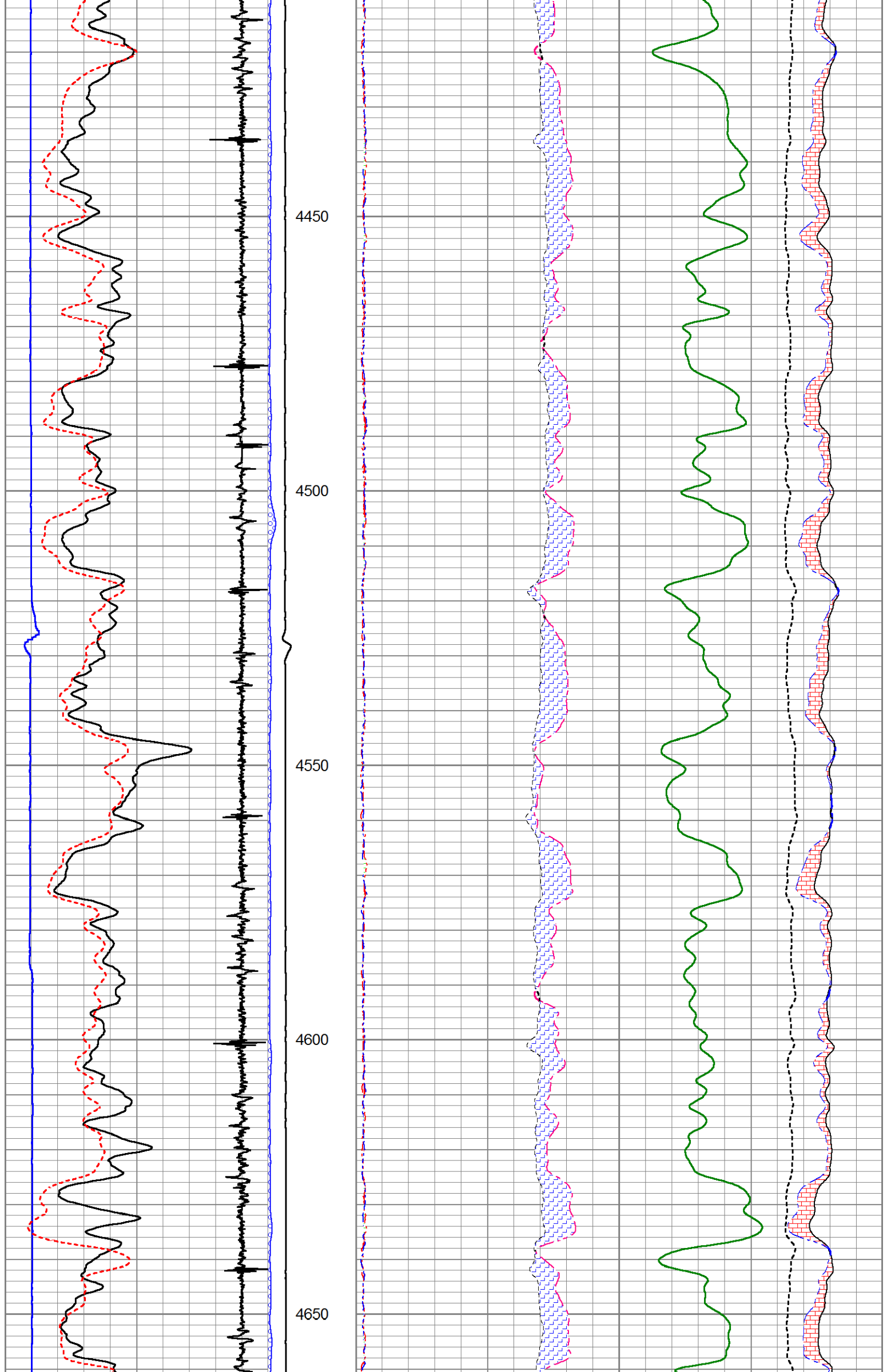
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Dataset Pathname    merge2  
Presentation Format   !1!!RM~1  
Dataset Creation     Wed Nov 30 02:24:10 2016  
Charted by           Depth in Feet scaled 1:240

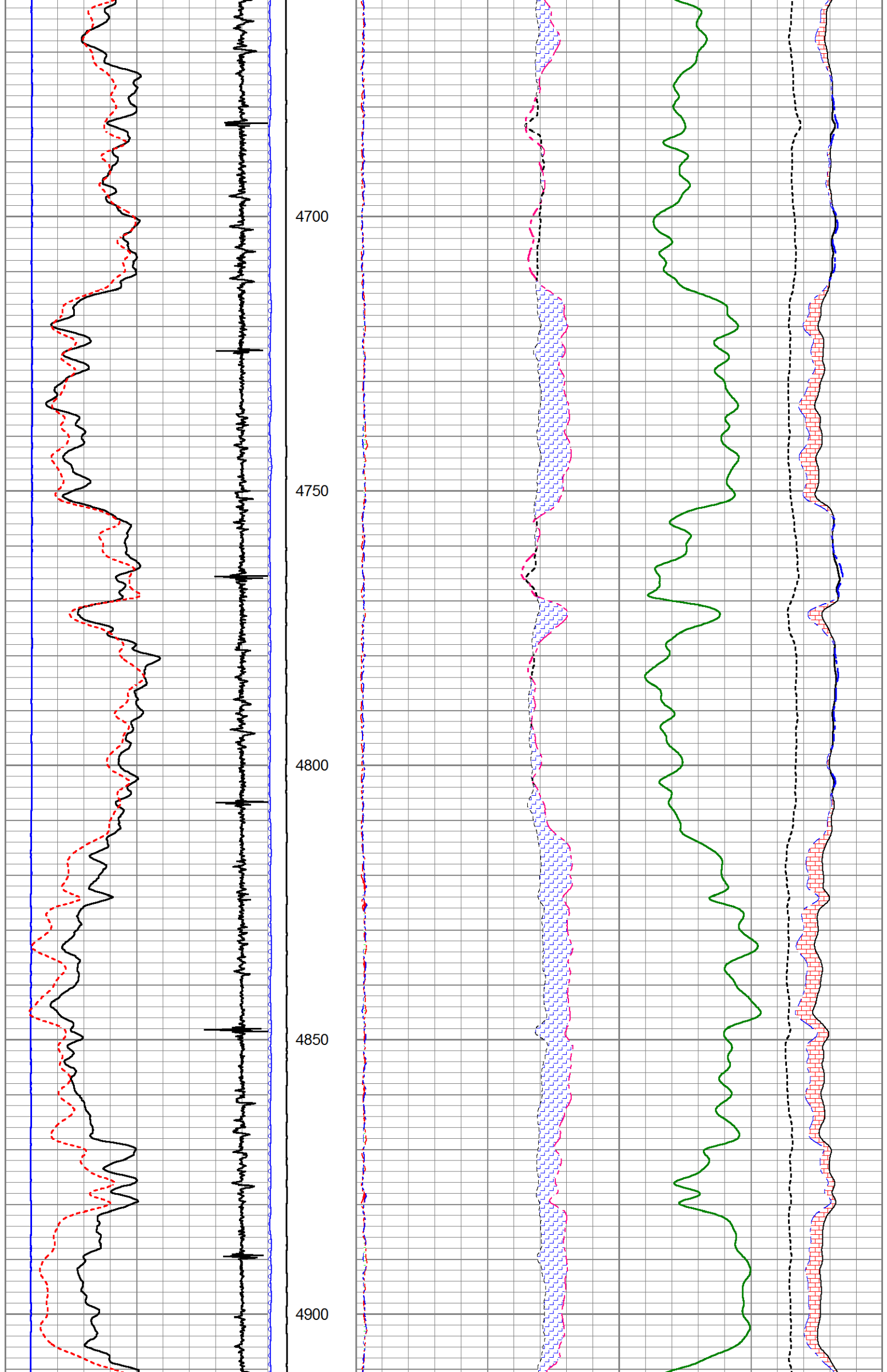
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0	LSPD (ft/min)	200	0	OAI1100	1.65	RIN (Ratio Near/Far Incl)	0.65	60000	NCAP	0
10	SGINear	40			0	NFTR (Near Fit Error)	100	60000	FCAP	0
					0	FFTR (Far Fit Error)	100			

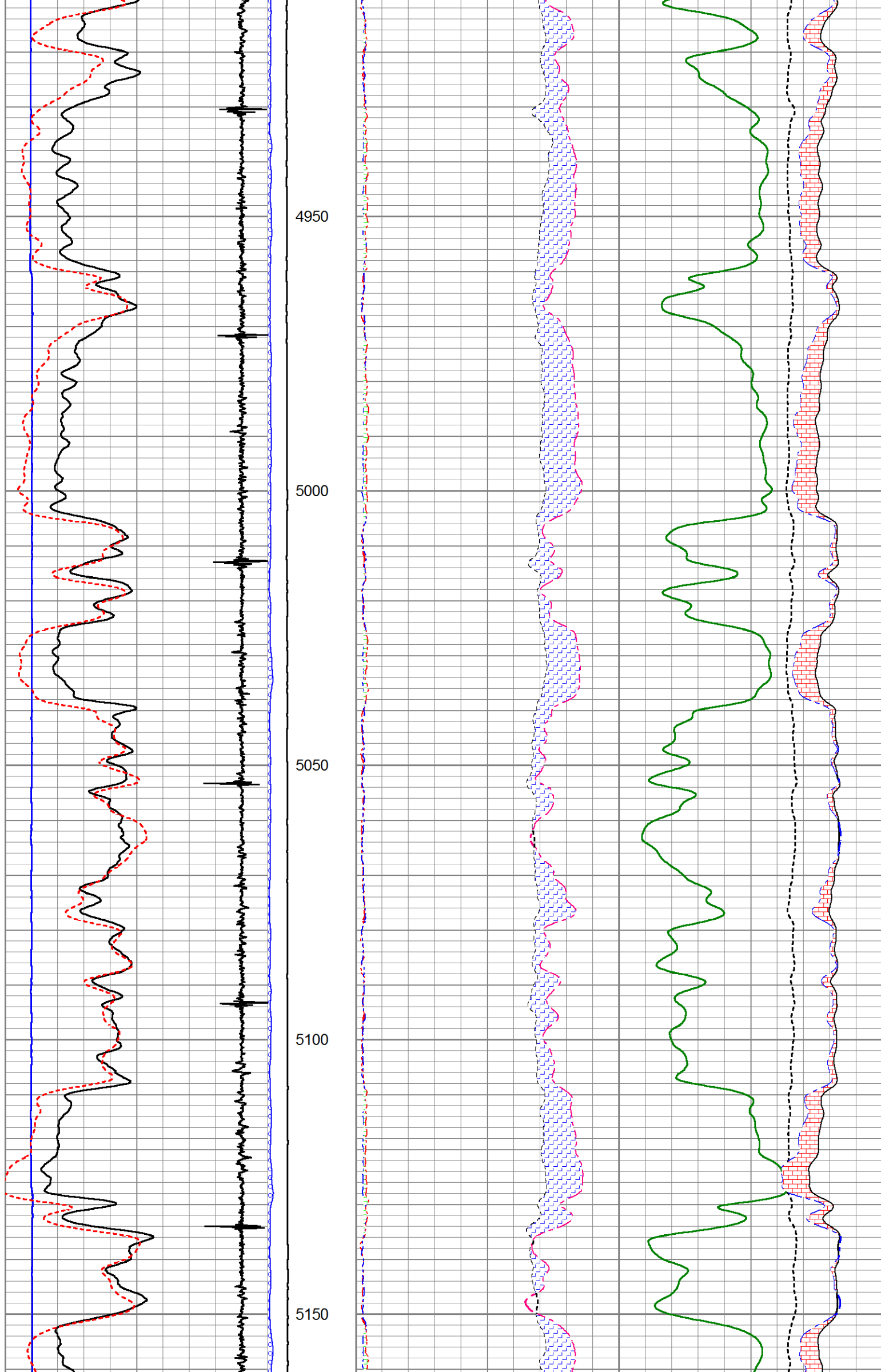


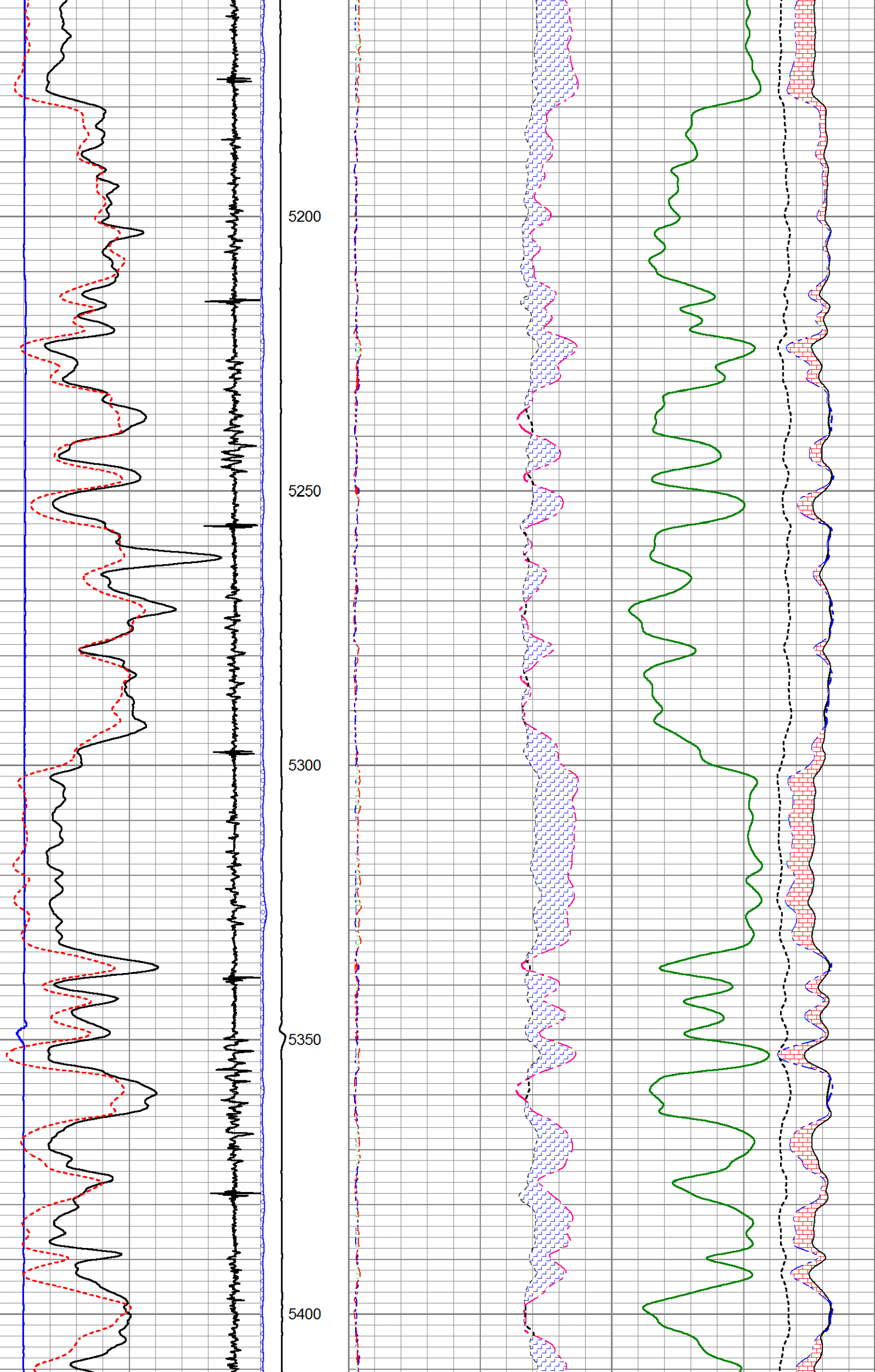


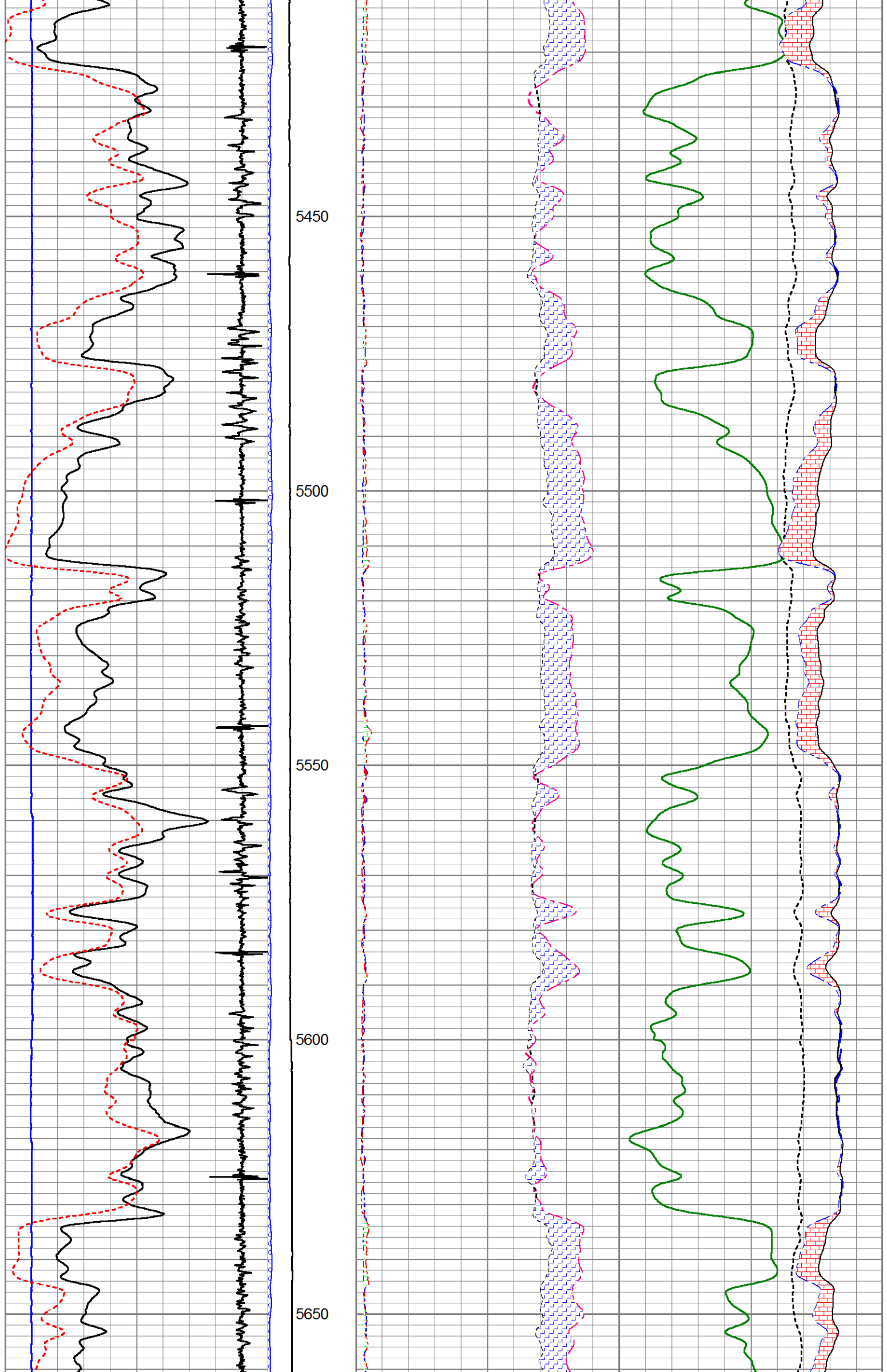




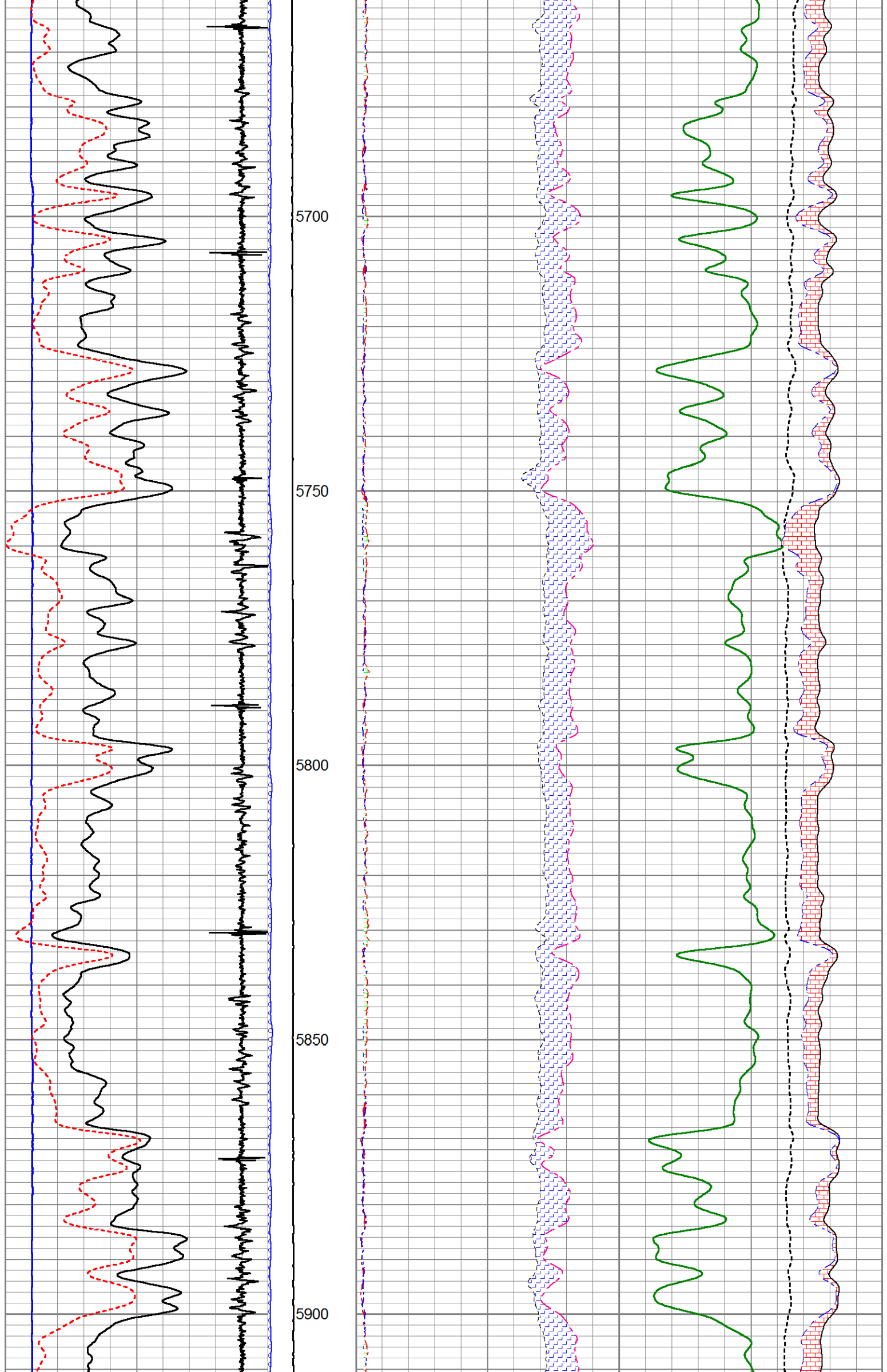


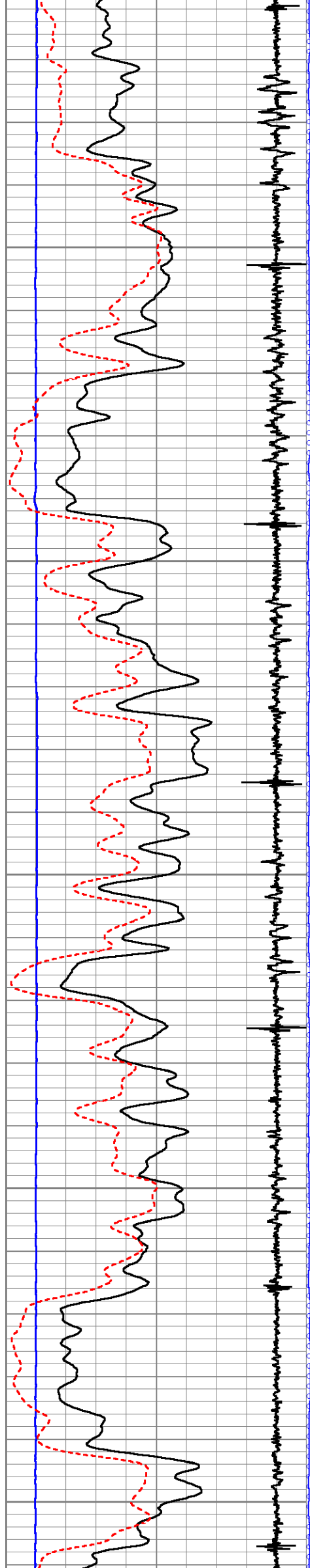












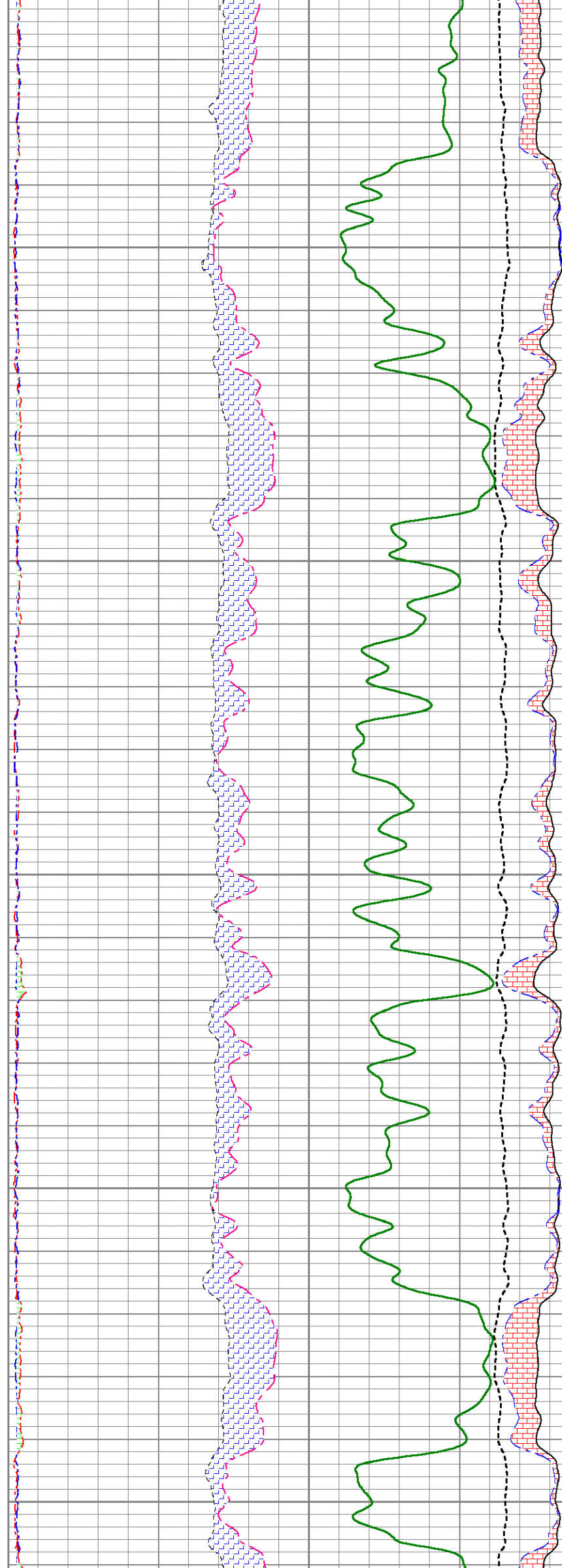
5950

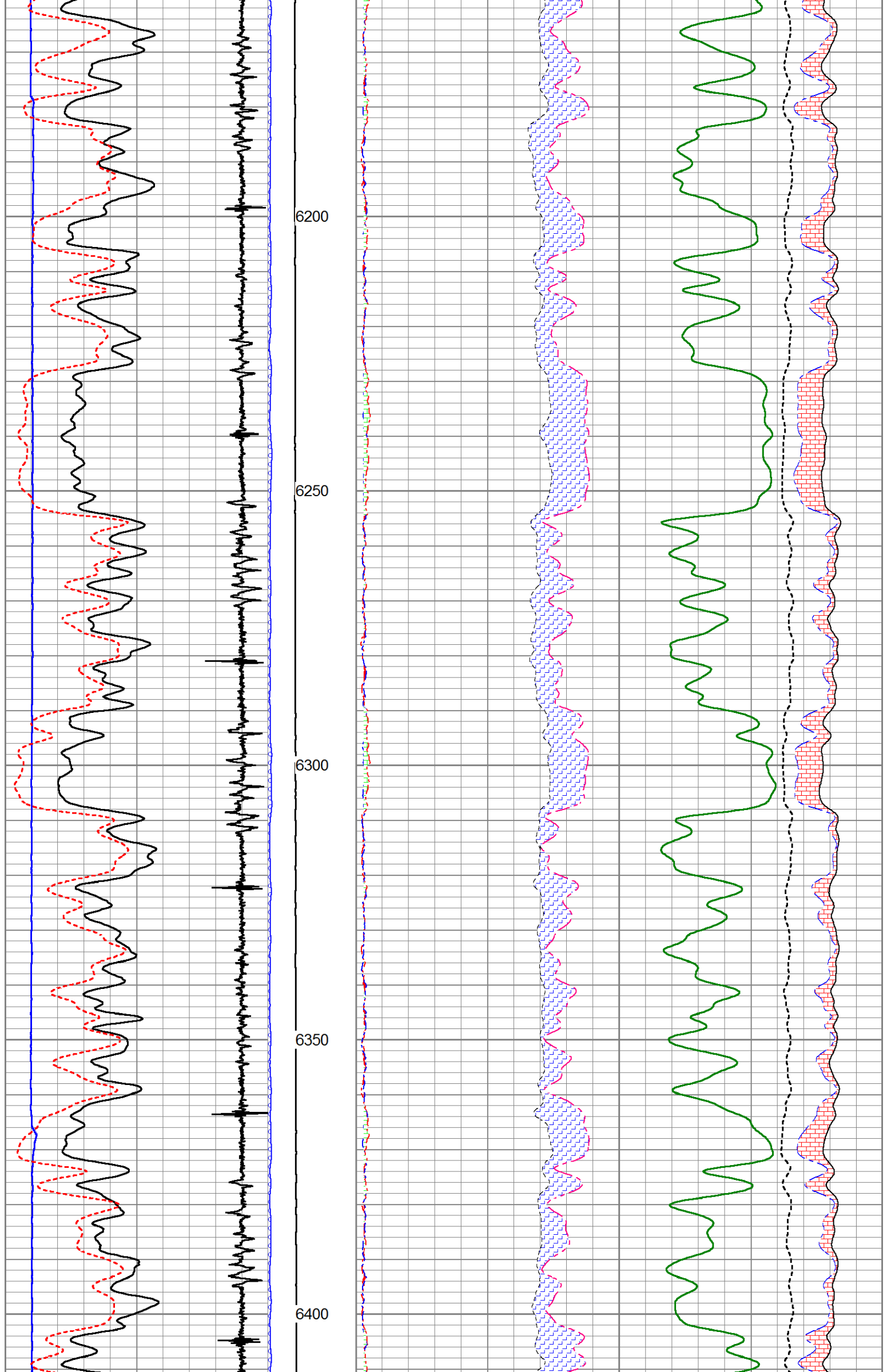
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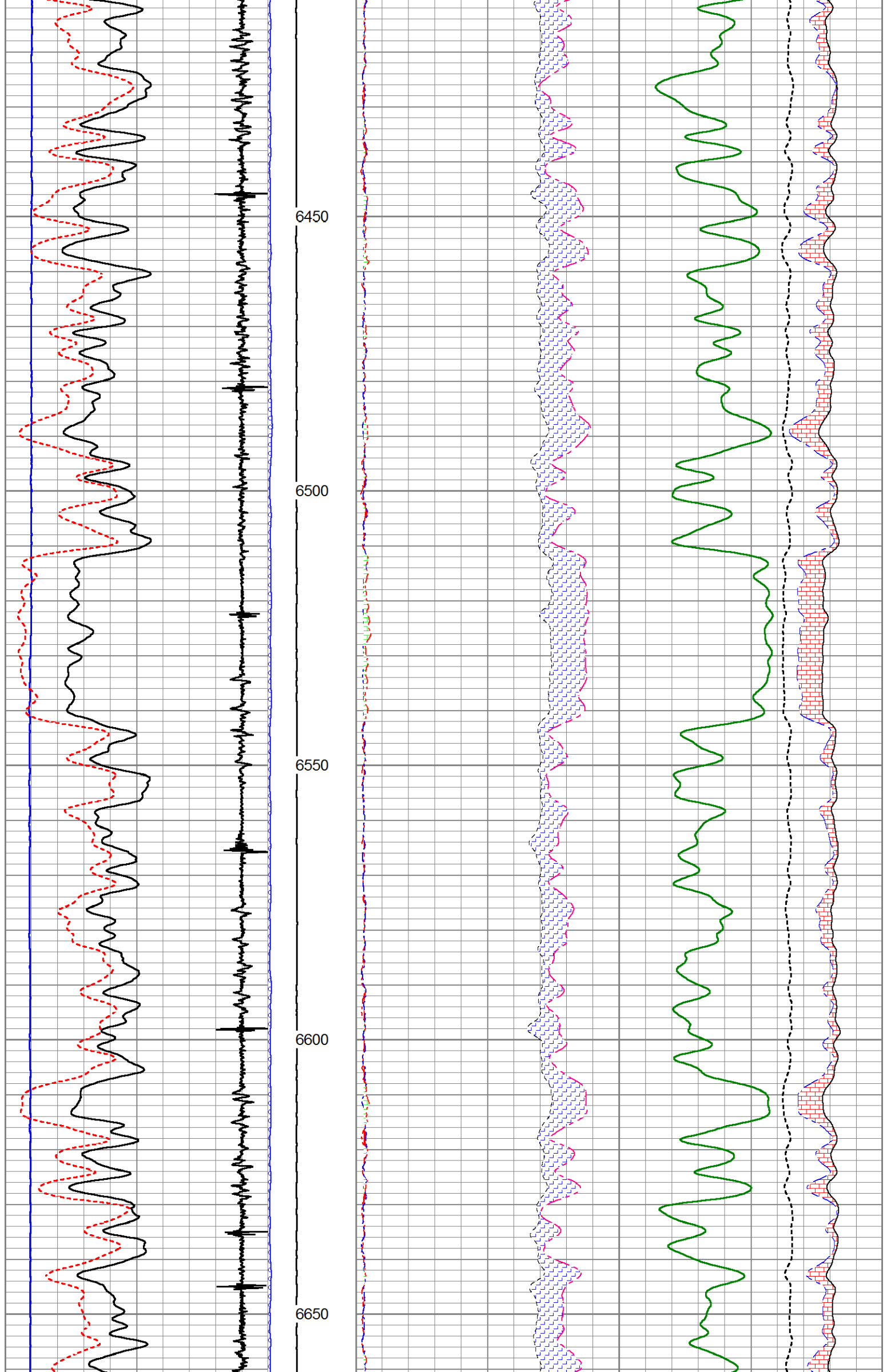
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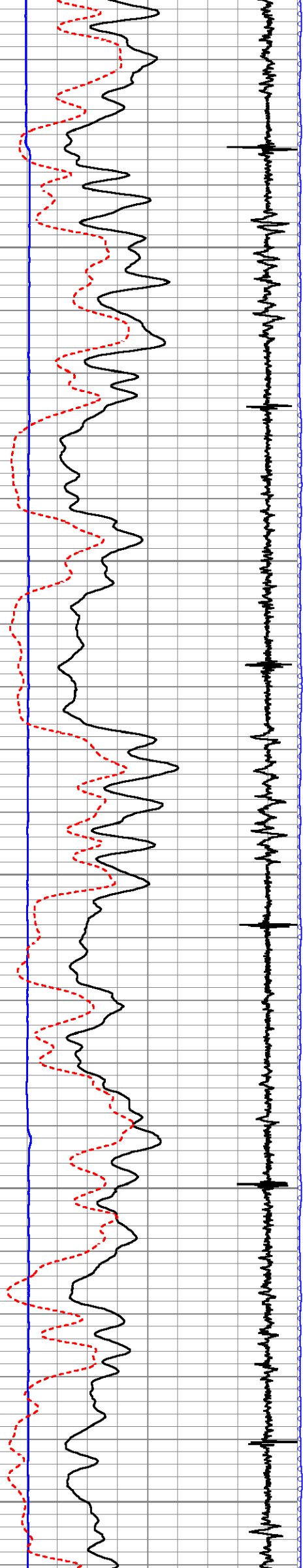
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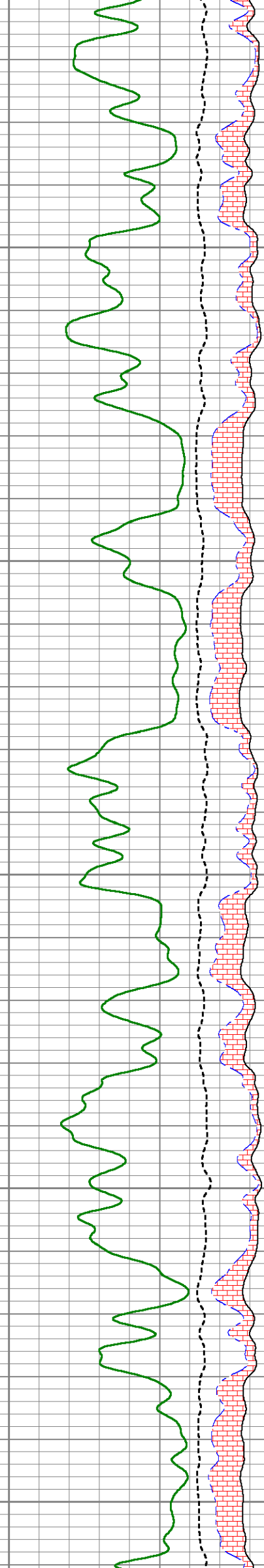
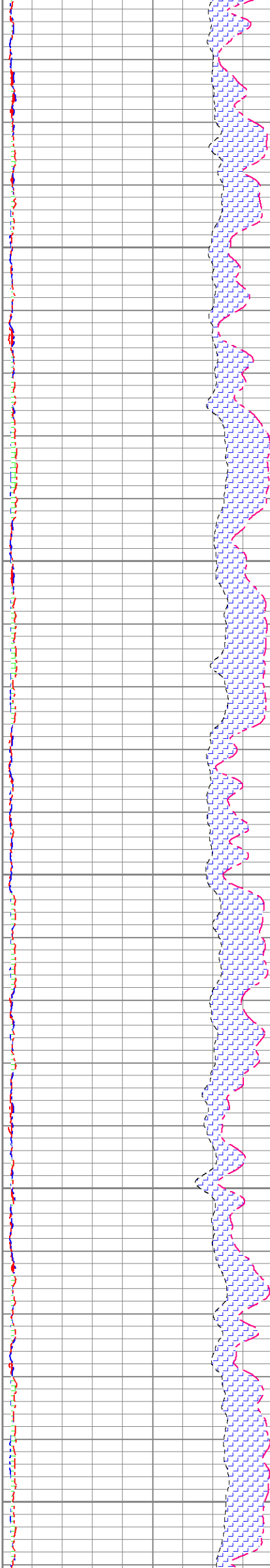
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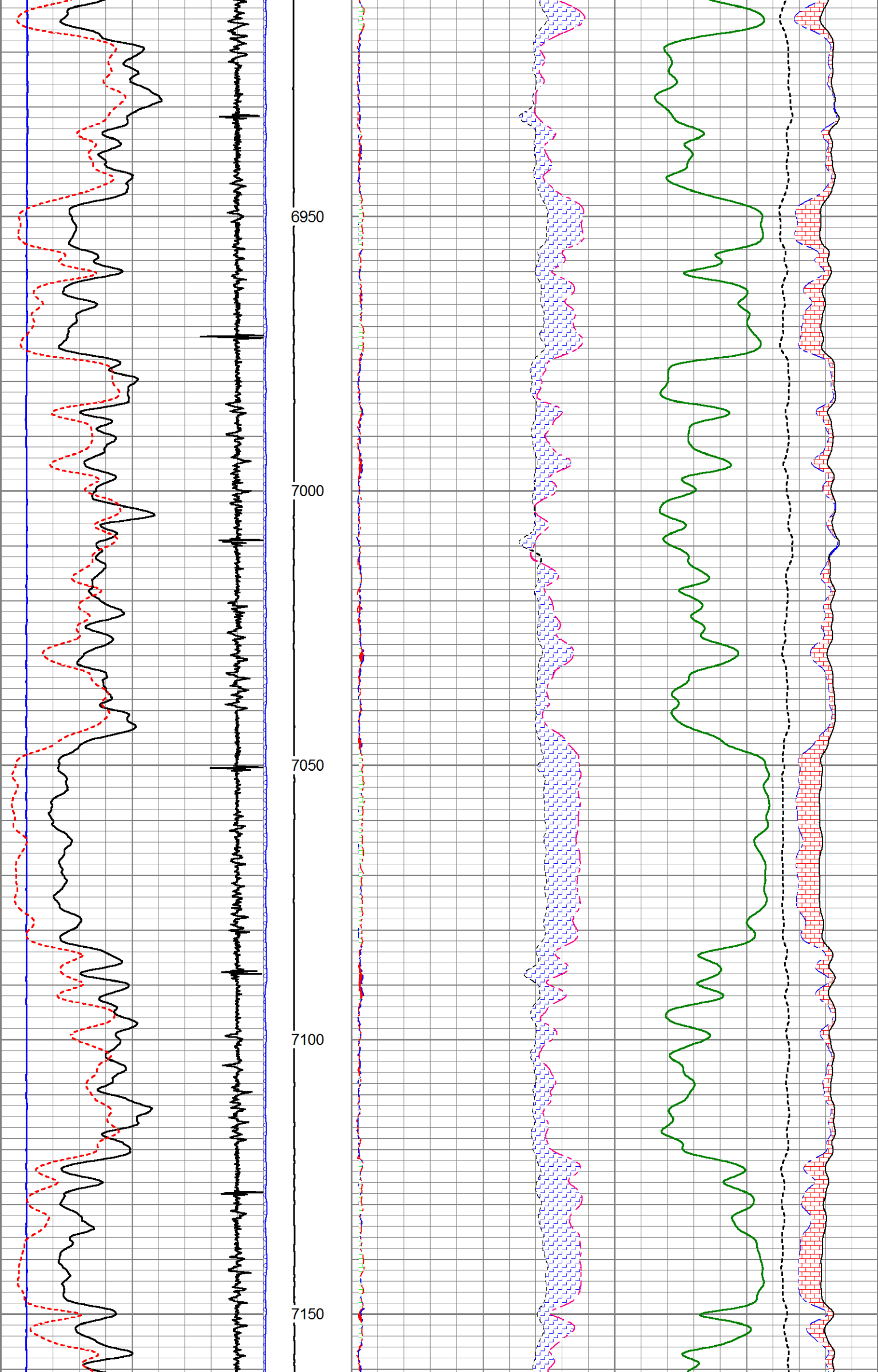
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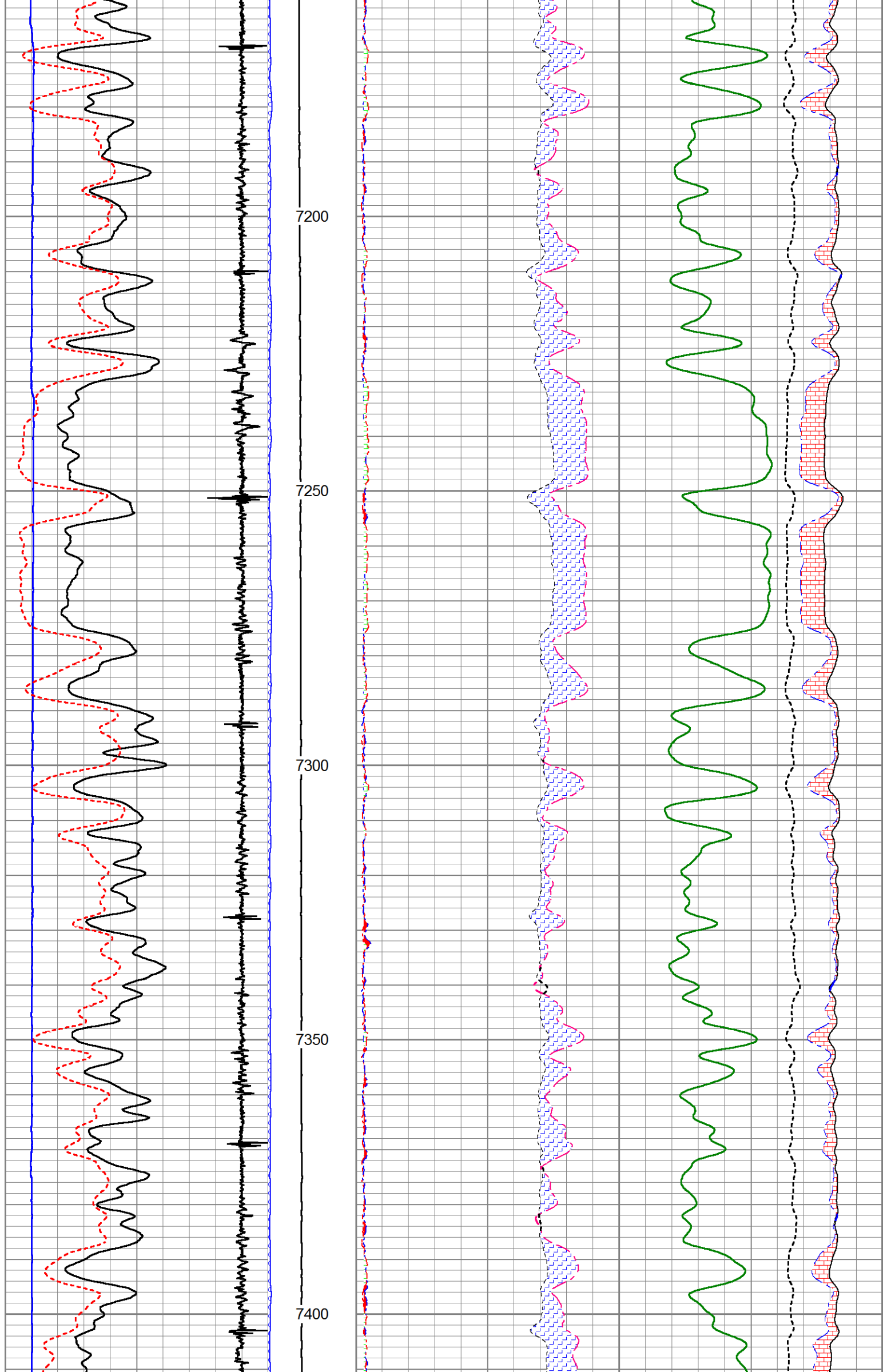
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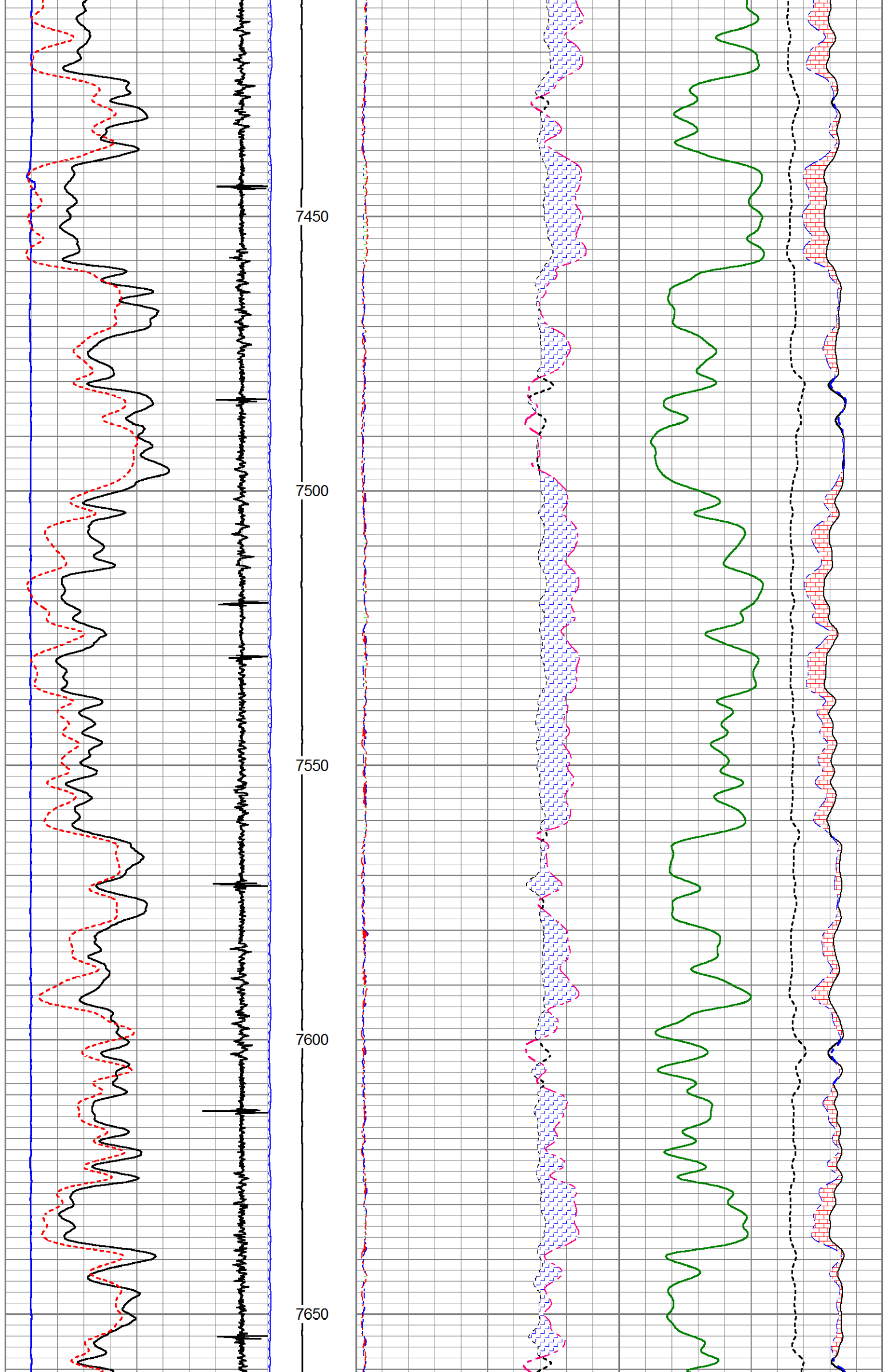
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6900

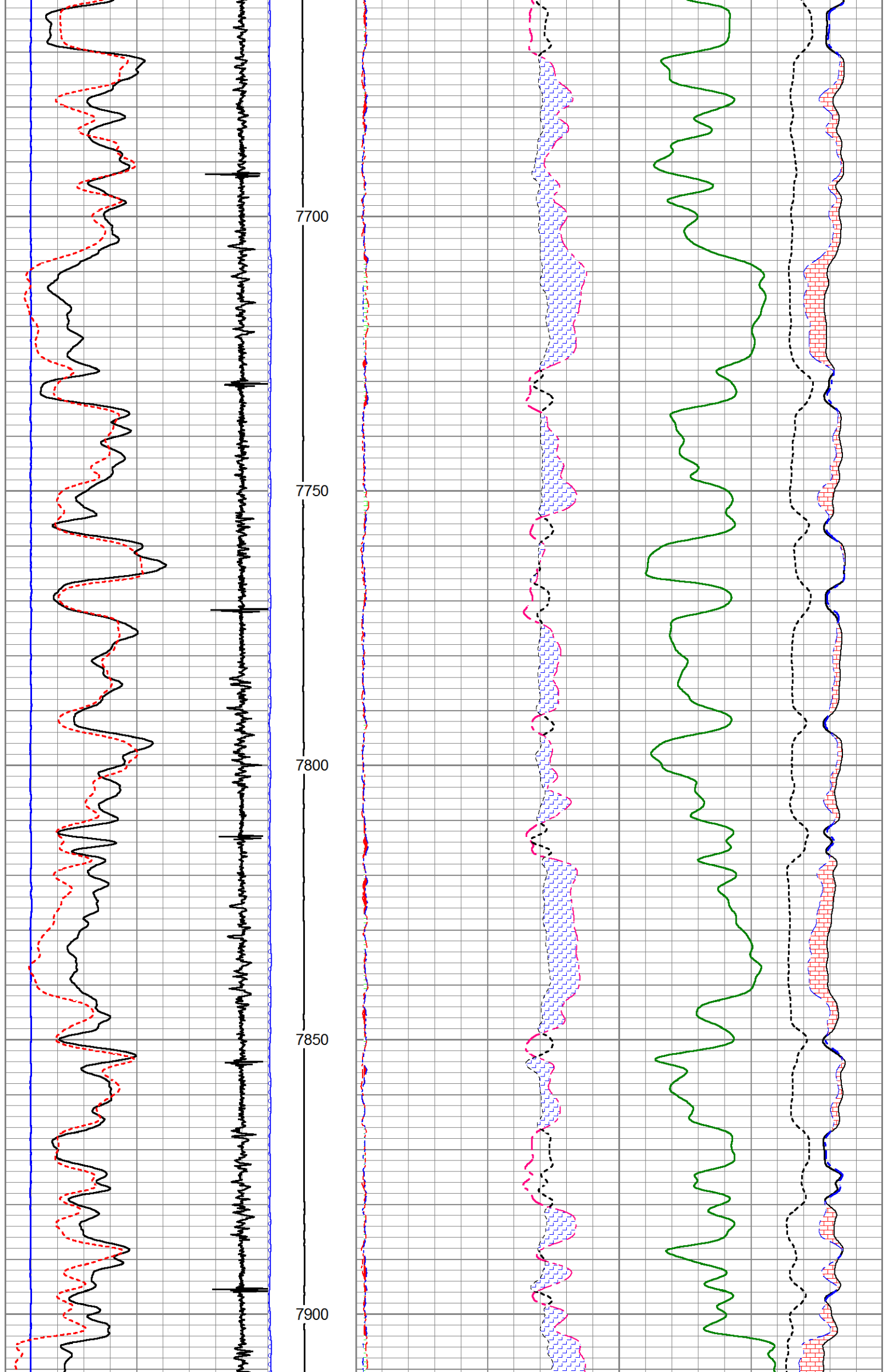


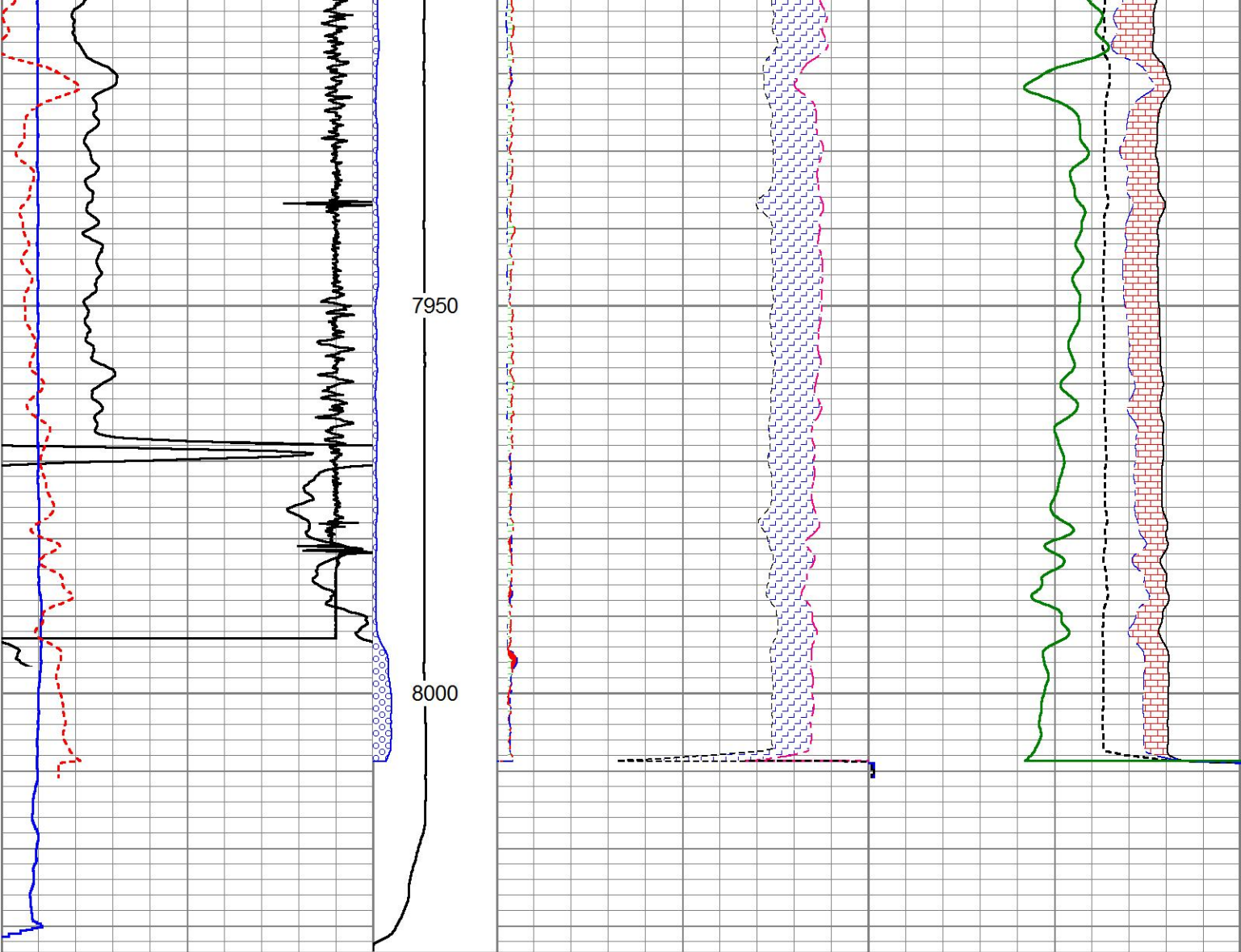












0	GR	200	LTEN	60	SGFF					0	
2700	CCL	-300		0 (lb/5000)	2	RNF (Ratio Near/Far)		0.5	100000	FSIN	0
0	LSPD (ft/min)	200	0 OAI1100	1.65	RIN (Ratio Near/Far Incl)		0.65	60000	NCAP		0
10	SGINear	40		0	NFTR (Near Fit Error)		100	60000	FCAP		0
				0	FFTR (Far Fit Error)		100				

MAIN PASS

HALLIBURTON

5" = 100'

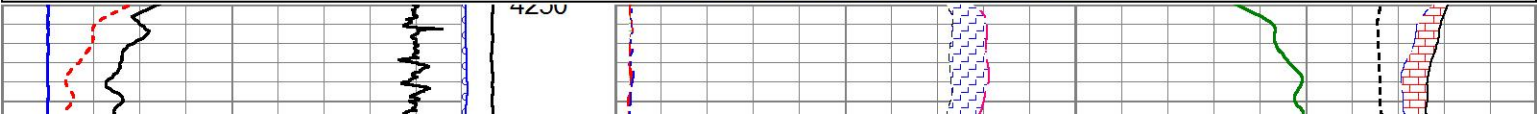
REPEAT PASS

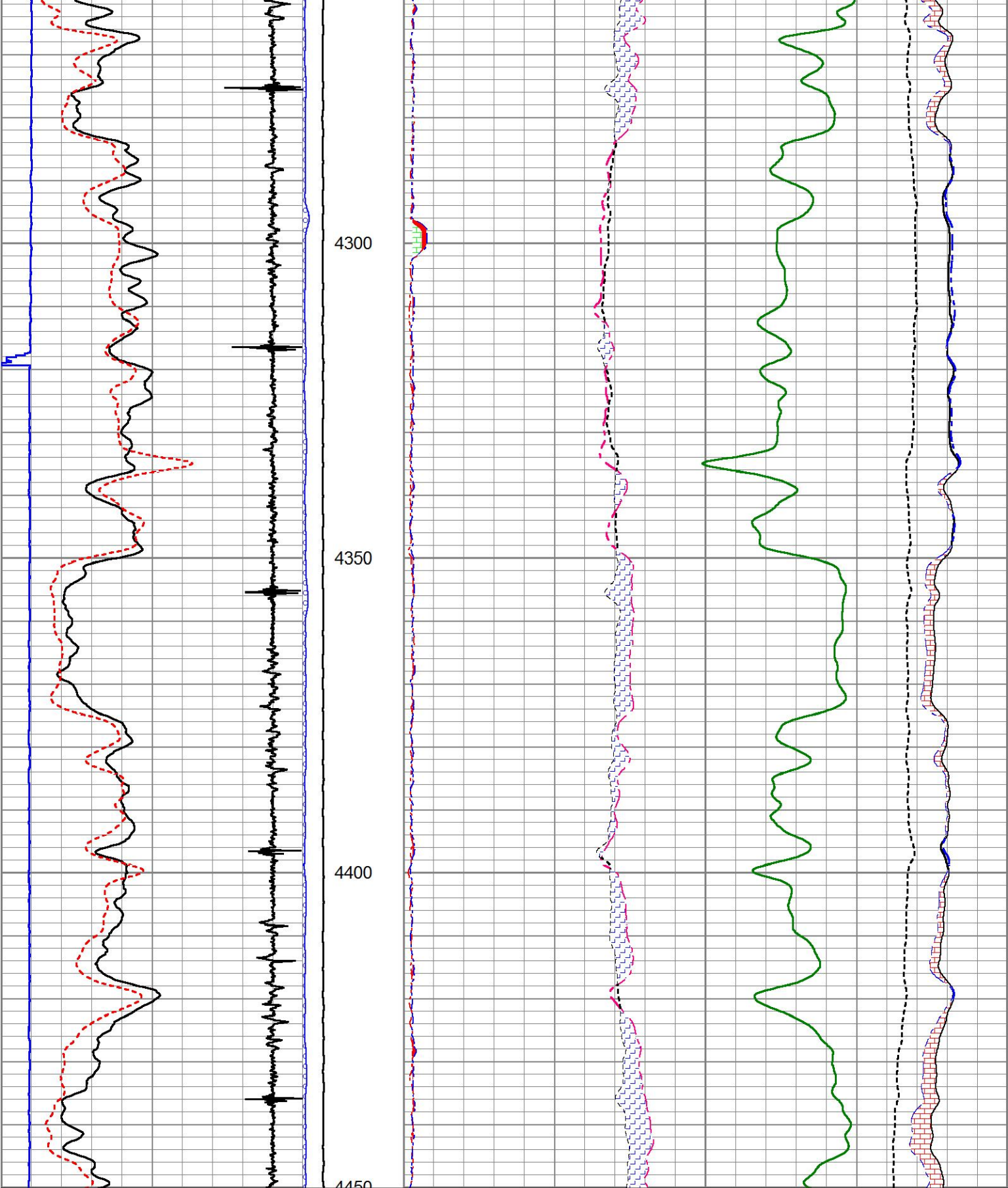
HALLIBURTON

5" = 100'

Database File	mr_b_24d_08_7_95.db									
Dataset Pathname	REPEAT									
Presentation Format	!1!!RM~1									
Dataset Creation	Tue Nov 29 06:26:35 2016									
Charted by	Depth in Feet scaled 1:240									

0	GR	200	LTEN	60	SGFF					0
2700	CCL	-300		0 (lb/5000)	2	RNF (Ratio Near/Far)	0.5	100000	FSIN	0
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				





0	GR	200	LTEN (lb 5000 OAI1100)	60	SGFF					0
2700	CCL	-300		2	RNF (Ratio Near/Far)		0.5	100000	FSIN	0
0	LSPD (ft/min)	200		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			

REPEAT PASS

HALLIBURTON

5" = 100'



Top - Bottom							
BHSAL1 1	BHSAL2 0	BHTEMP_Src TEMP	BITSIZE in 7.875	BORSAL kppm 150	BOTTEMP degF 210	CASED? Yes	CASEOD in 4.5
CASETHCK in 0.25	CASEWGHT lb/ft 11.6	LTH Sandstone	MAXAMPL mV 0	MINAMPL mV 1	MINATTN db/ft 0.8	MSGGN 1	MudWgt lb/gal 8.4
PERFS 0	POROS1 1	POROS2 0	PPT usec 0	RHOCF 0.25	SO in 0	SRFTEMP degF 30	TDEPTH ft 8100
UHSGC NONE	USERFTT usec/ft 0	ZREF MRayl 1.7					

Calibration Report		
Database File	mr_b_24d_08_7_95.db	
Dataset Pathname	MAIN5	
Dataset Creation	Tue Nov 29 10:31:16 2016	
Cement Bond Log Shop Calibration Report		
Serial-Model:	12091451-A	
Calibration Performed:	Tue Nov 29 06:05:42 2016	
Free Pipe Calibration		
TT	Measured	Units
Amplitude	244.4	usec
Log Base Line	520.6	mV
	8.6	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	0.159	
Reservoir Monitor Tool I Calibration Report		
Serial-Model:	12095949-A	
Shop Calibration Performed:	Thu Nov 24 11:32:44 2016	

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 Temperature	50.0 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




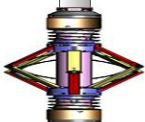



Calibration Software Modules	
HRMTI Module	2015.5.4.0
RMTI Module	2015.10.16.1
Log Data Acquisition Software Modules	
HRMTI Module	2015.5.4.0
RMTI Module	2015.10.16.1

Gamma Ray Calibration Report

Type / Serial:	002 / 11214503
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SHOP CALIBRATION		Wed Nov 09 16:25:32 2016			
Background	Counts/Sec.	Gain	Offset	Jig	Units
Calibrator	34.1				cps
	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
RmtTFGT RmtTNGT	22.91		XHU-003 (000001) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
	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
RmtNFwvMcsP	14.66		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
RmtCommFWa	14.66					
Temp	9.57		HCBLM-A (12091451) Halliburton HCBLM Tool	9.38	2.75	116.00
TT3FT	7.32					
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

