

HALLIBURTON

RESERVOIR
MONITORING TOOL
ELITE

Company		URSA OPERATING COMPANY LLC		Company		URSA OPERATING COMPANY LLC	
Well		MONUMENT RIDGE B 34B-08-7-95		Well		MONUMENT RIDGE B 34B-08-7-95	
Field		PARACHUTE		Field		PARACHUTE	
County		GARFIELDStateCO		County		GARFIELDStateCO	
Permanent Datum		GROUND LEVEL		Elevation		5702'	
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		27 NOV 2016 @ 12:00		Type Fluid in Hole		FRESH WATER	
Run No.		ONE		Density of Fluid		8.4 PPG	
Depth - Driller		7491'		Fluid Level		SURFACE	
Depth - Logger		7303'		Cement Top Est. Logged		1836'	
Bottom - Logged Interval		7300'		Equipment / Location		11808537 / RS. WY	
Top - Log Interval		3529'		Recorded by		B. RIDDEL	
Max. Recorded Temp.		210 degF		Witnessed by		R. TOLLE	
CEMENTING DATA		Surface		Protection		Production	
		String		String		String	
Date / Time Cemented		N/A		N/A		N/A	
Primary / Squeeze		N/A		N/A		N/A	
Expected Compressive Strength		N/A		psi@ N/A hrs		psi@ N/A hrs	
Cement Volume		N/A		N/A		N/A	
Cement Type / Weight		N/A		/ N/A		/ N/A	
Formulation		N/A		N/A		N/A	
Mud Type / Mud Wgt.		N/A		/ N/A		/ N/A	
Run Number		24"		From		To	
ONE		12.25"		60"		1778'	
TWO		7.875"		1778'		7491'	
THREE							

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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 : 1836'
GAMMA BLANKET : 408 GAPI
FREE PIPE CALIBRATION DEPTH : 505'

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

Service Ticket No.	903665397	API No.	05045229090000	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.	11836468
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	Gamma	Gamma	Pressure	Gamma
ONE	4050'	3850'	0 PSI	20	REPEAT		
TWO	7303'	3529'	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		

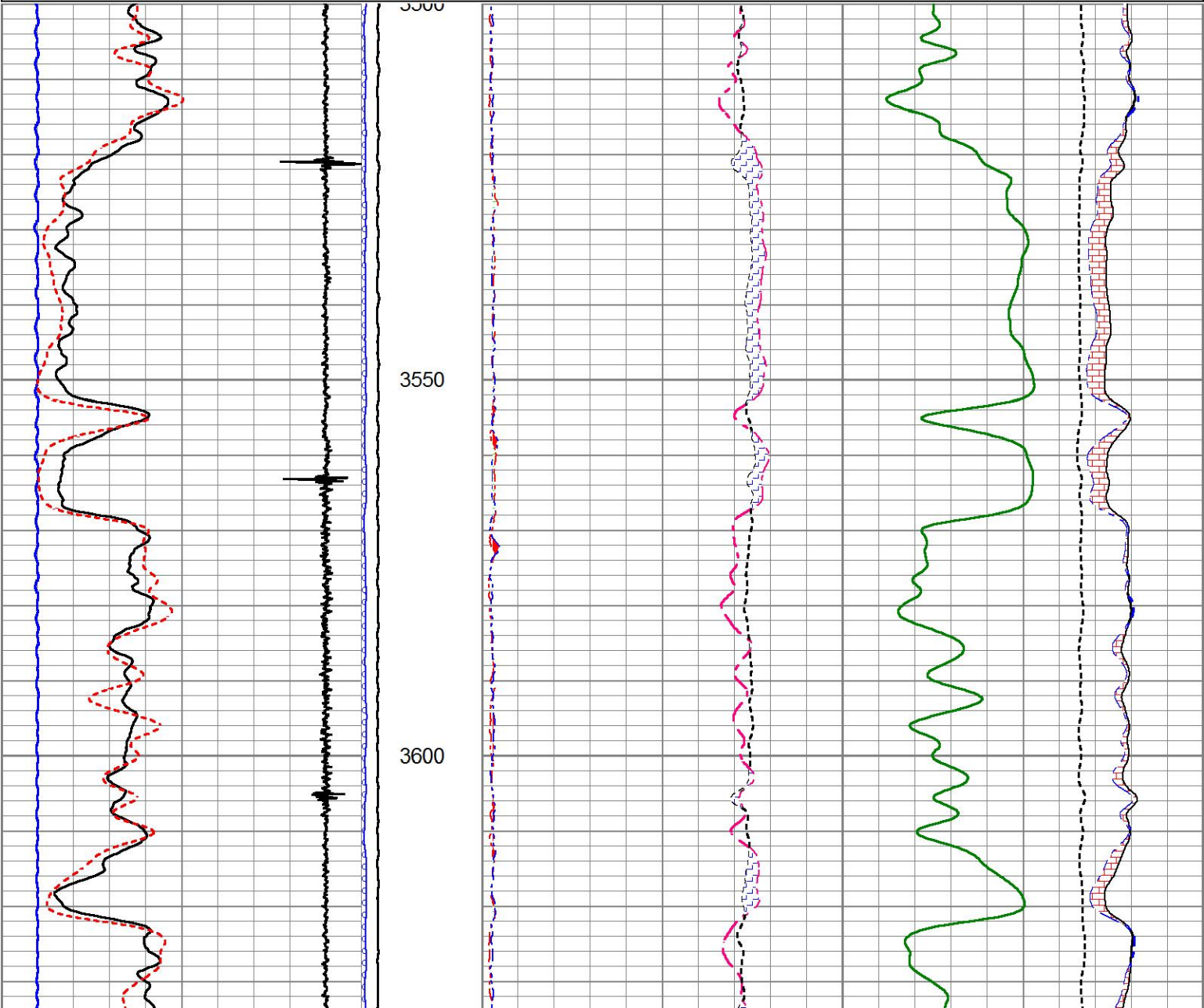
MAIN PASS

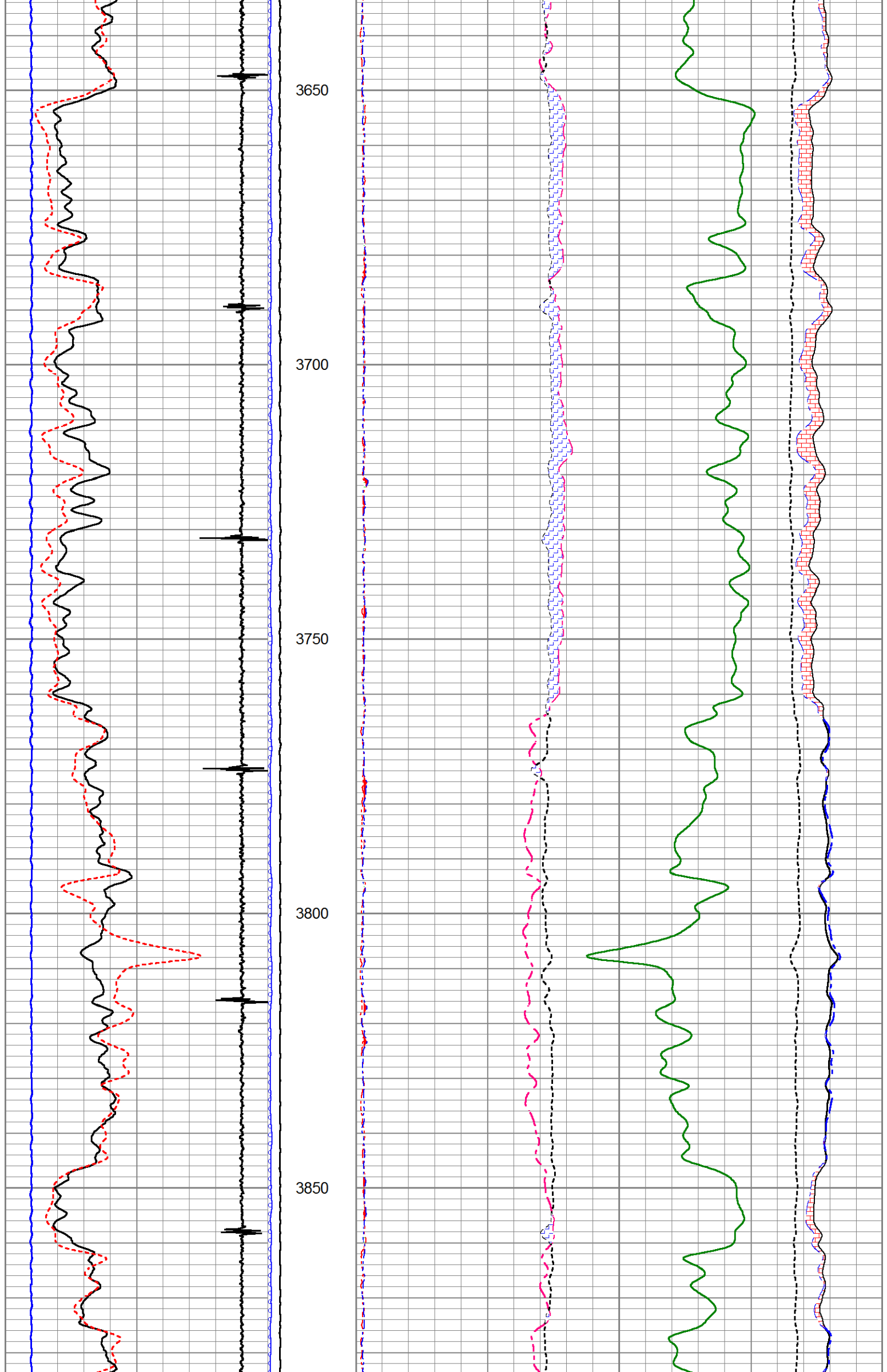
HALLIBURTON

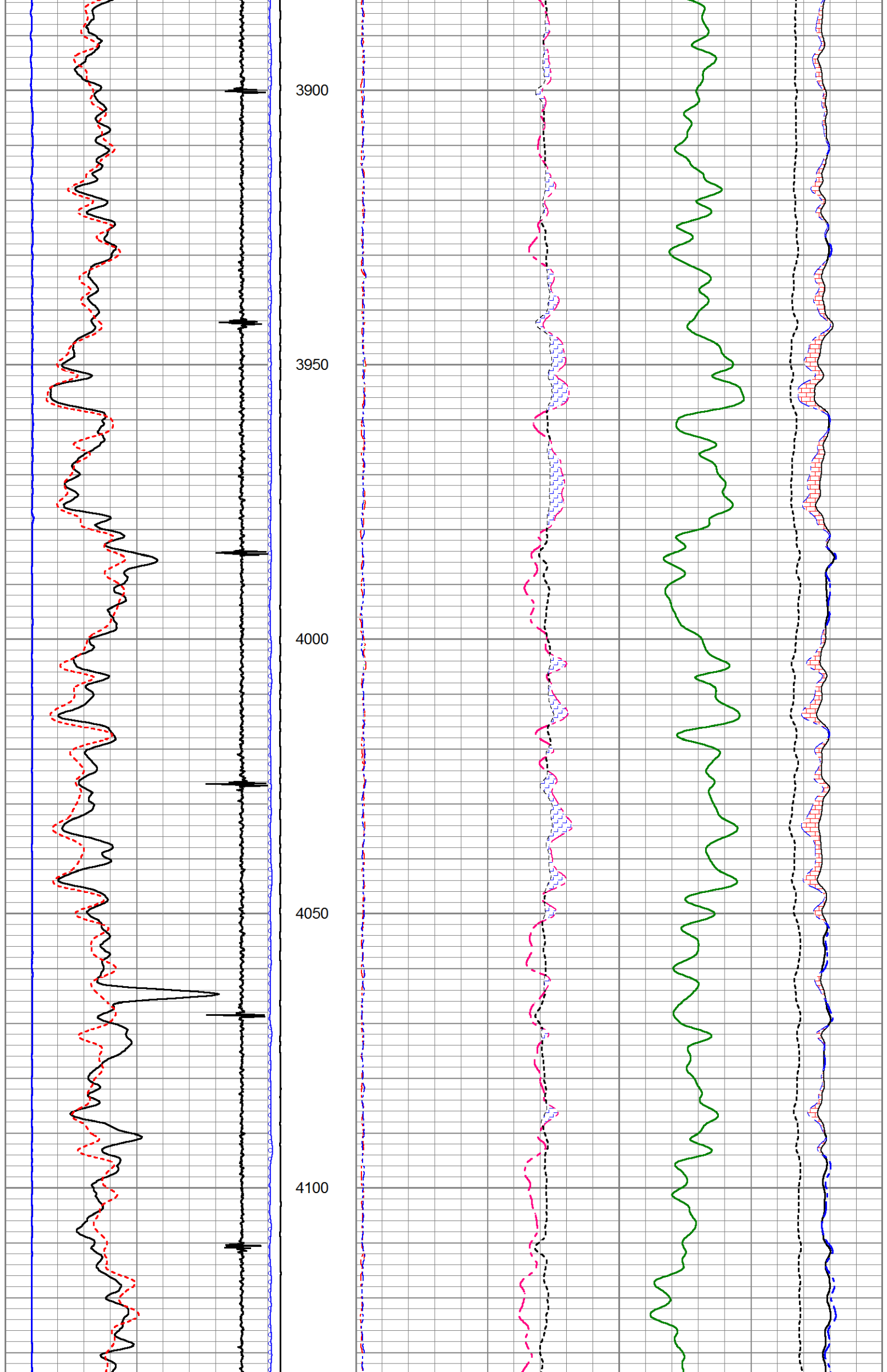
5" = 100'

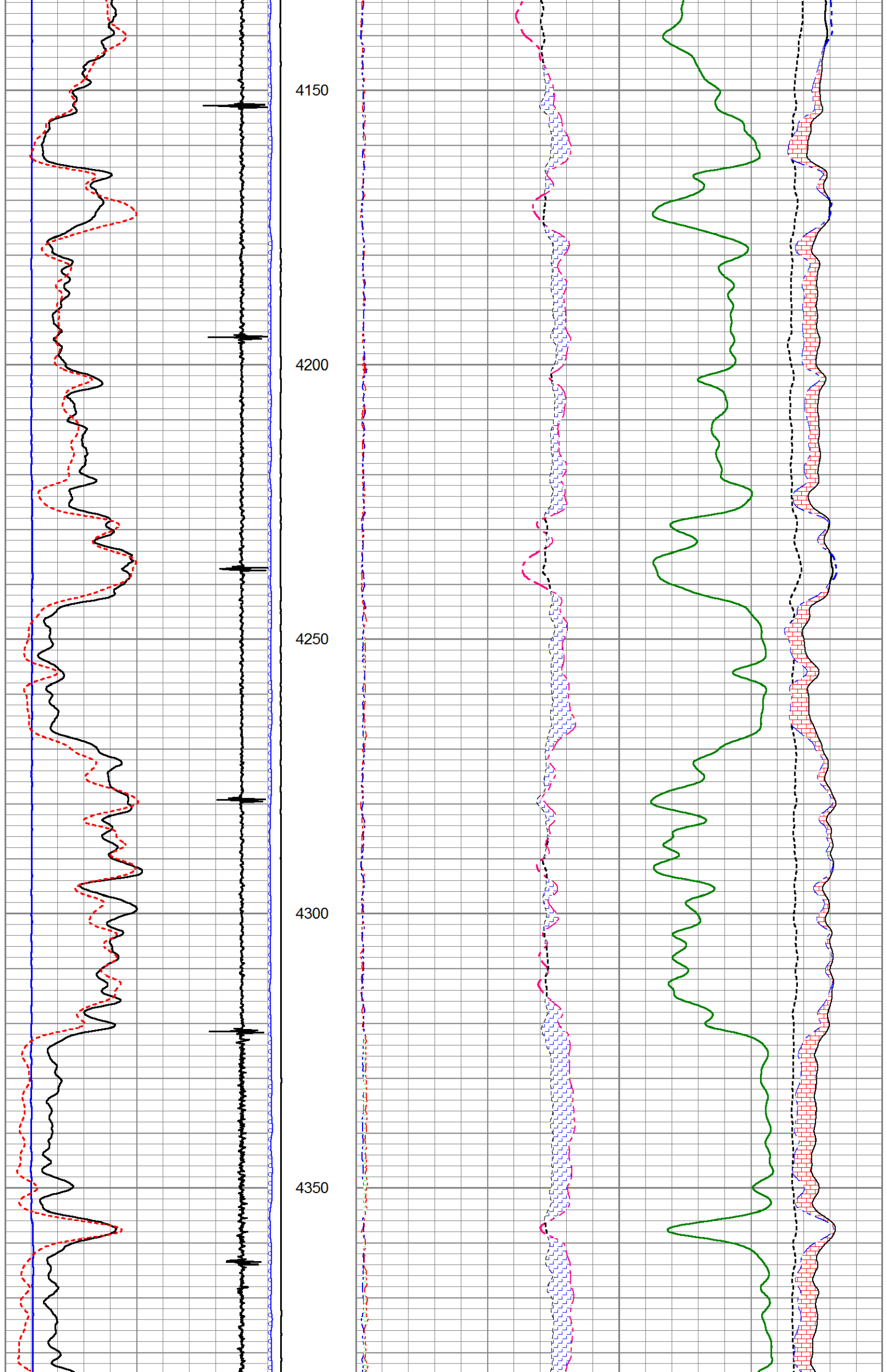
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Dataset Pathname rmt_main
Presentation Format !1!!rmt_rmti
Dataset Creation Mon Nov 28 01:00:18 2016
Charted by Depth in Feet scaled 1:240

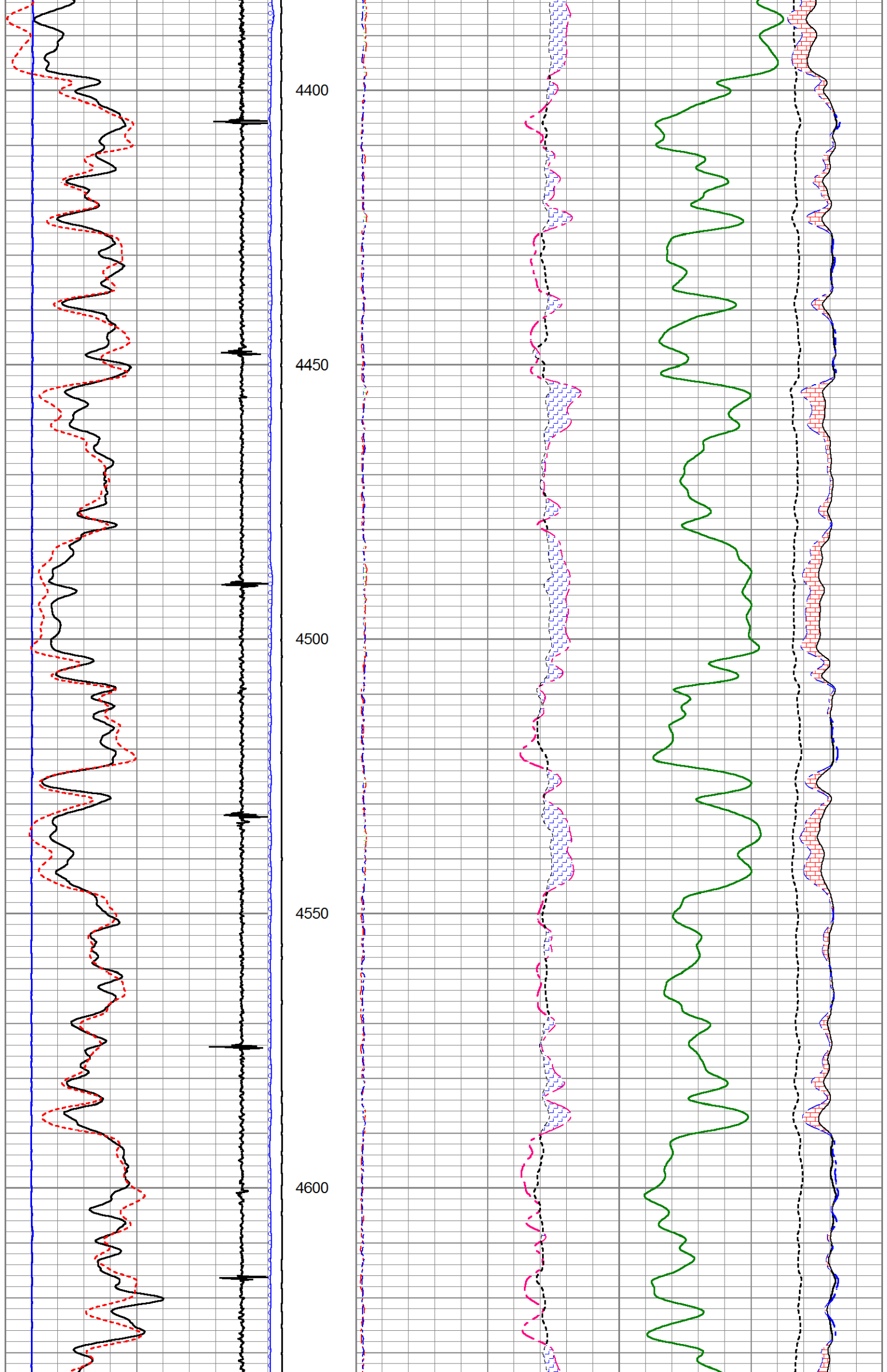
0	GR	200	LTEN	60	SGFF			0
2700	CCL	-300	0 (lb5000	2	RNF (Ratio Near/Far)	0.5	100000	FSIN 0
0	LSPD (ft/min)	200	0 OAI1100	1.65	RIN (Ratio Near/Far Incl)	0.65	60000	NCAP 0
10	SGINear	40		0	NFTR (Near Fit Error)	100	60000	FCAP 0
				0	FFTR (Far Fit Error)	100		

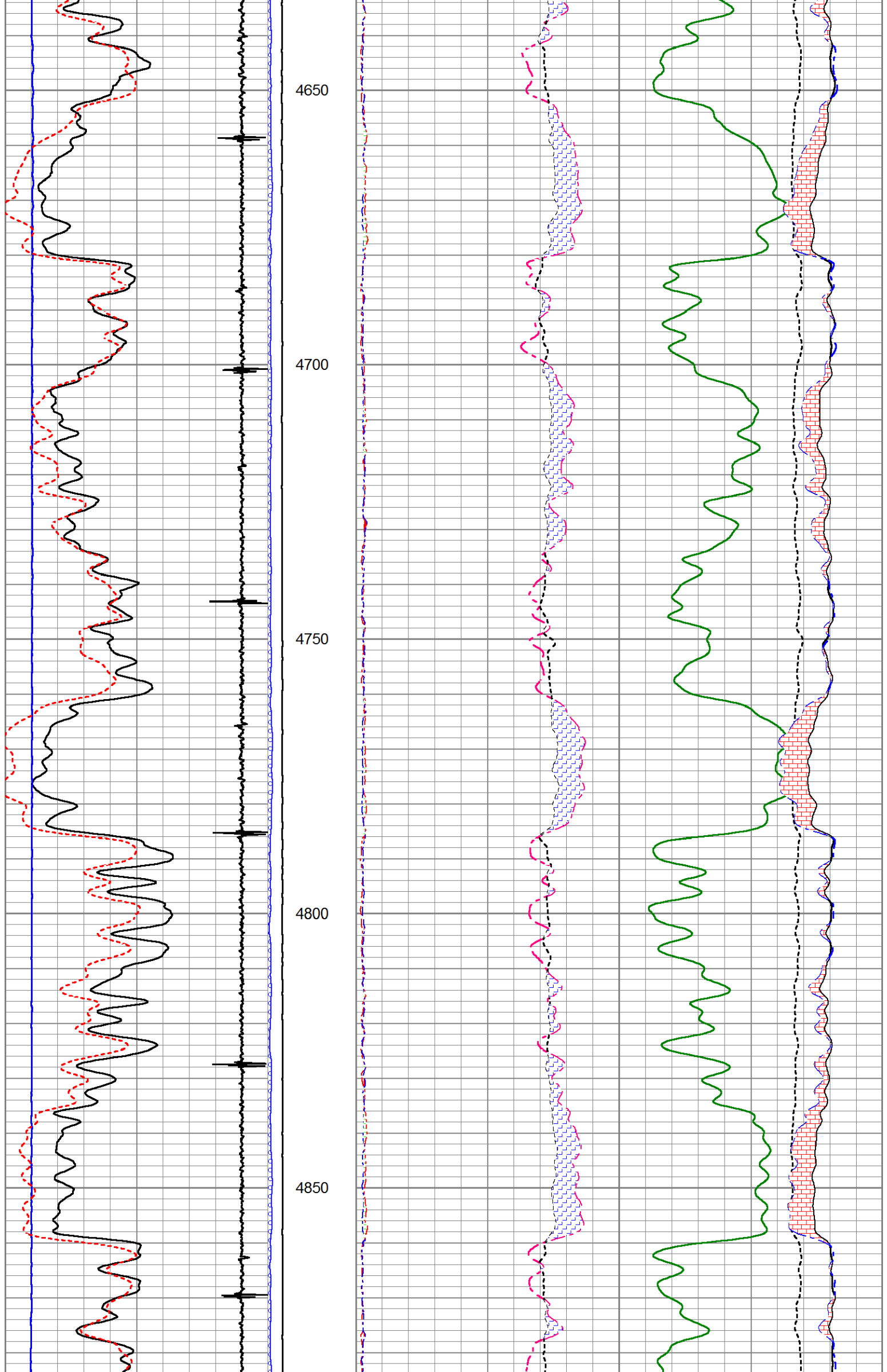


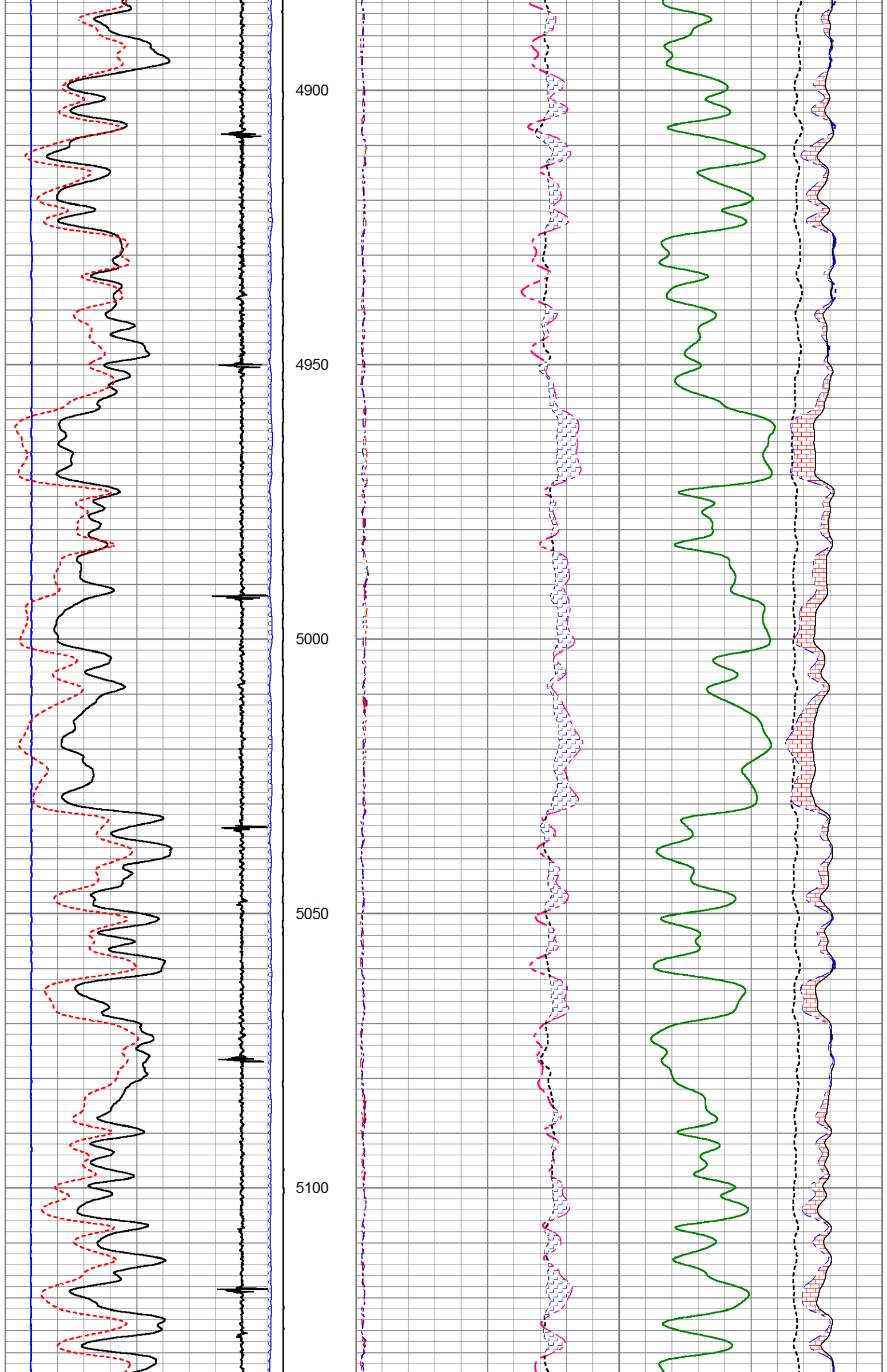


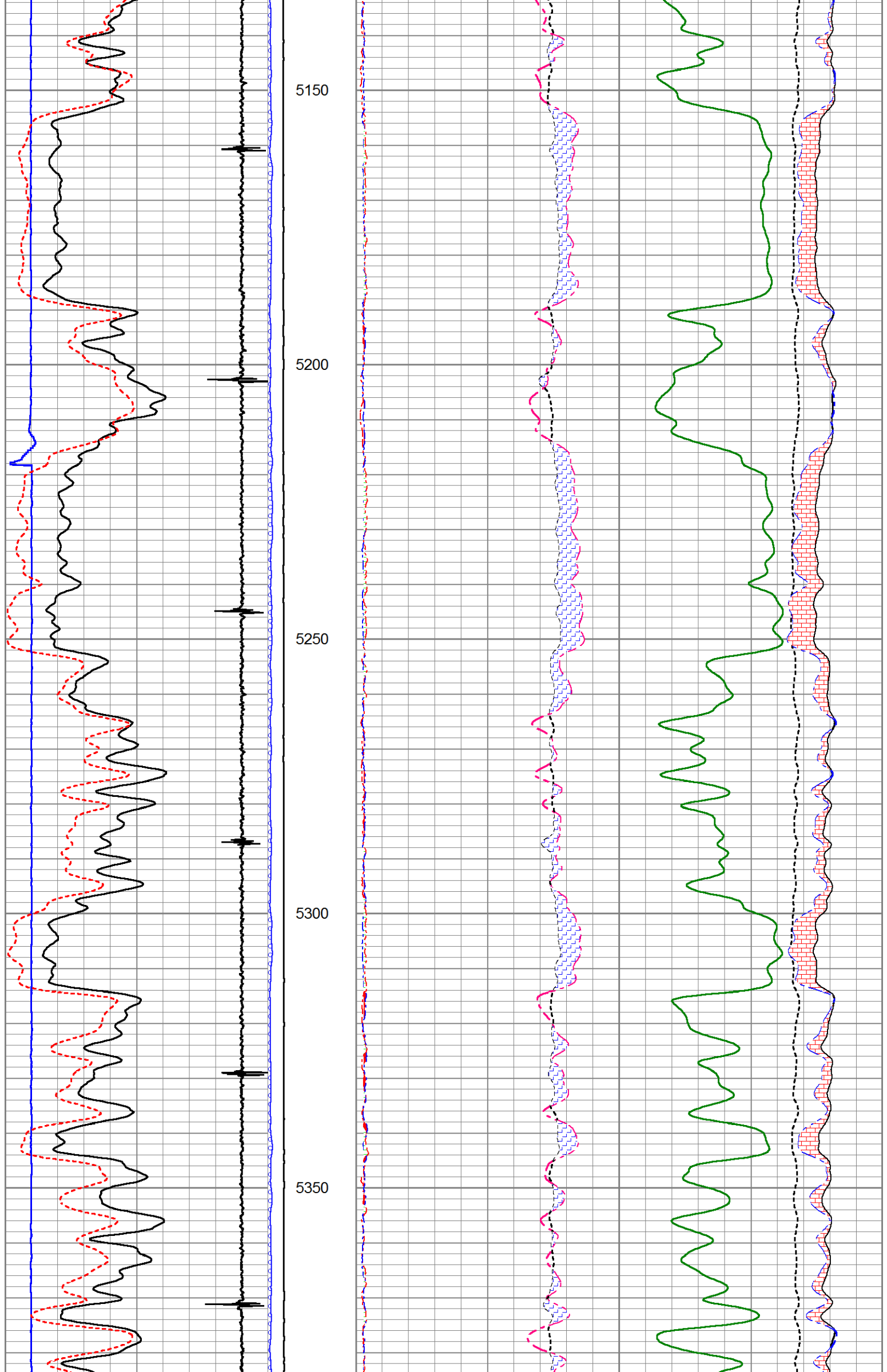


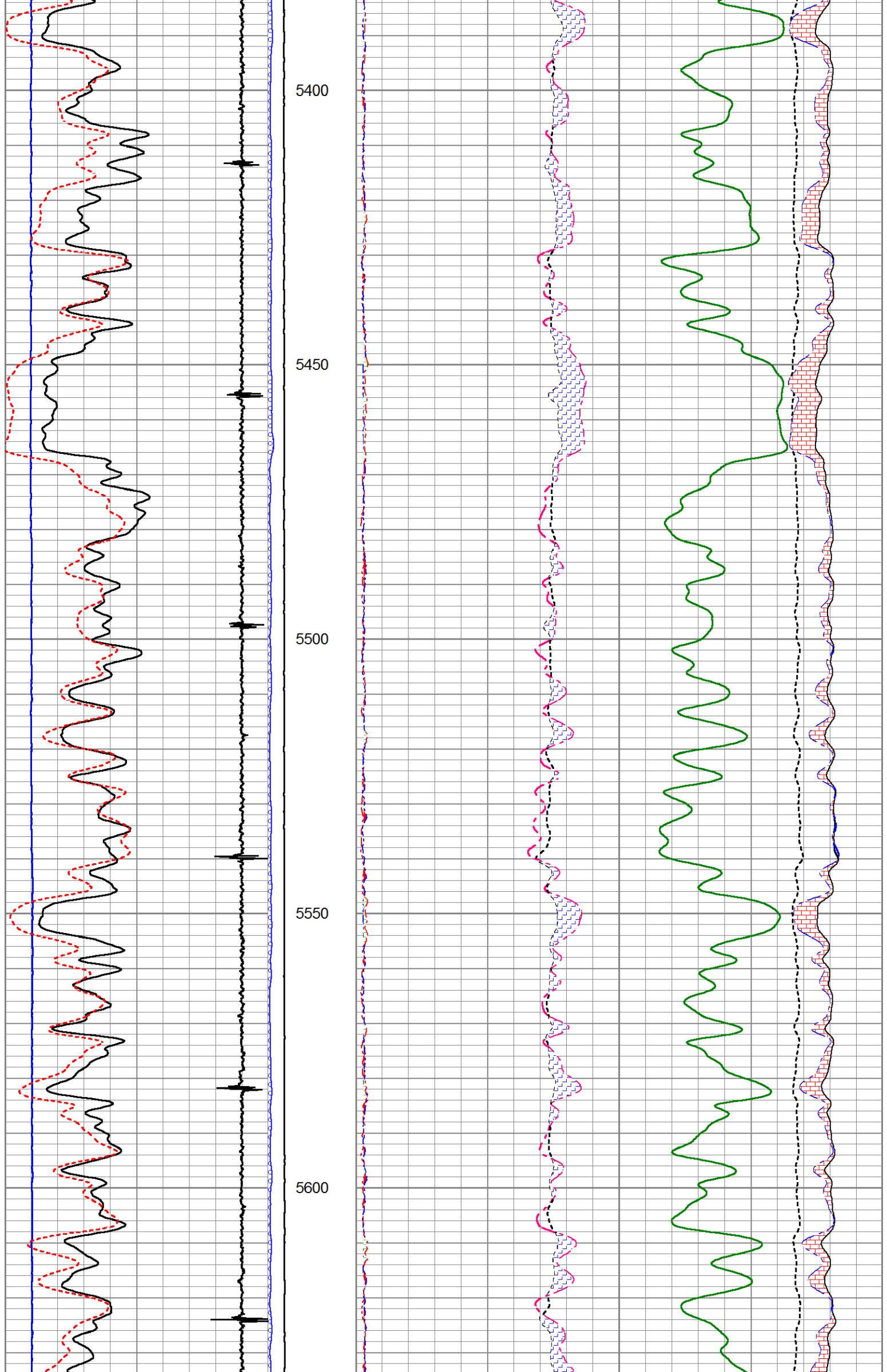


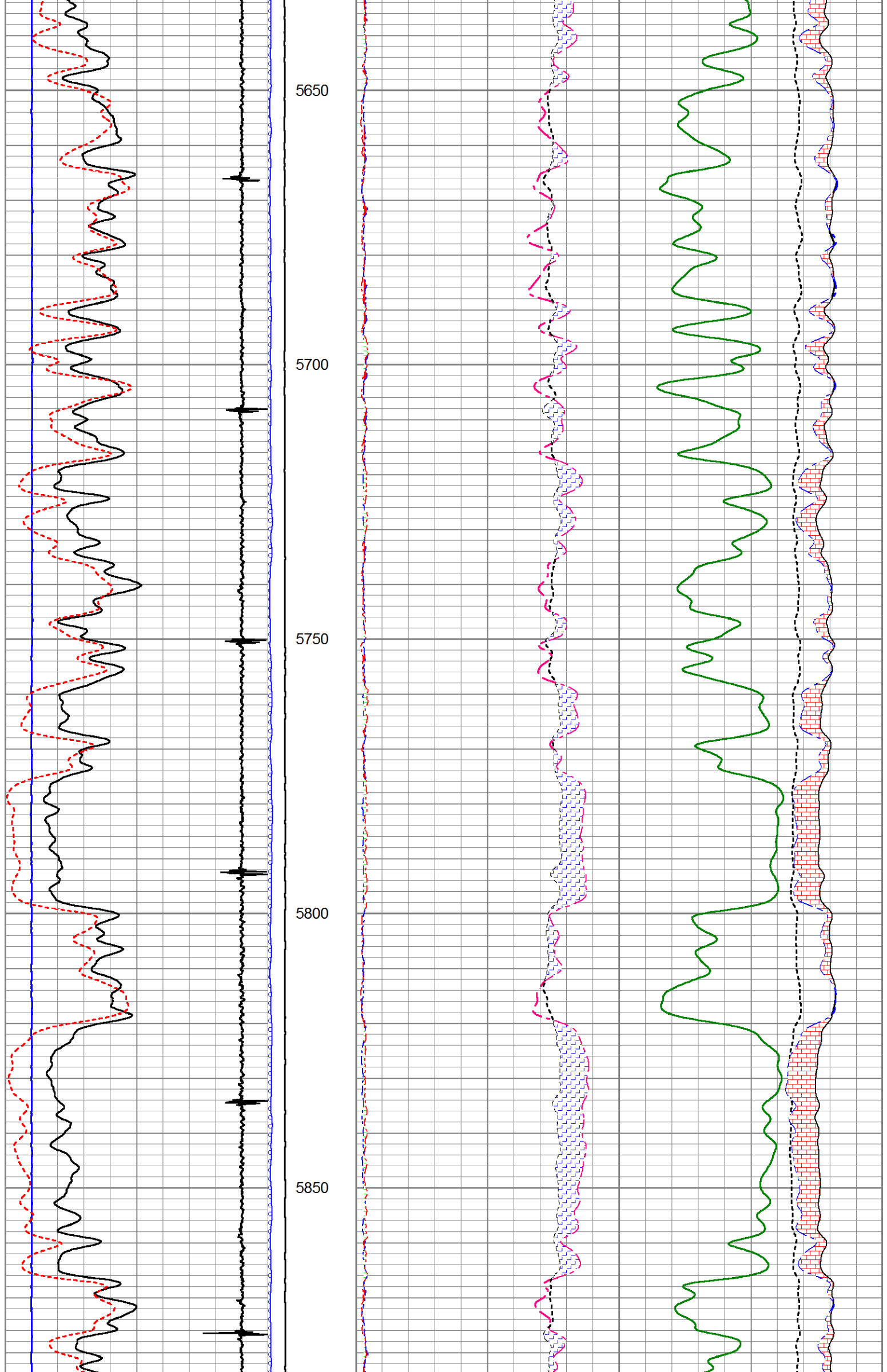


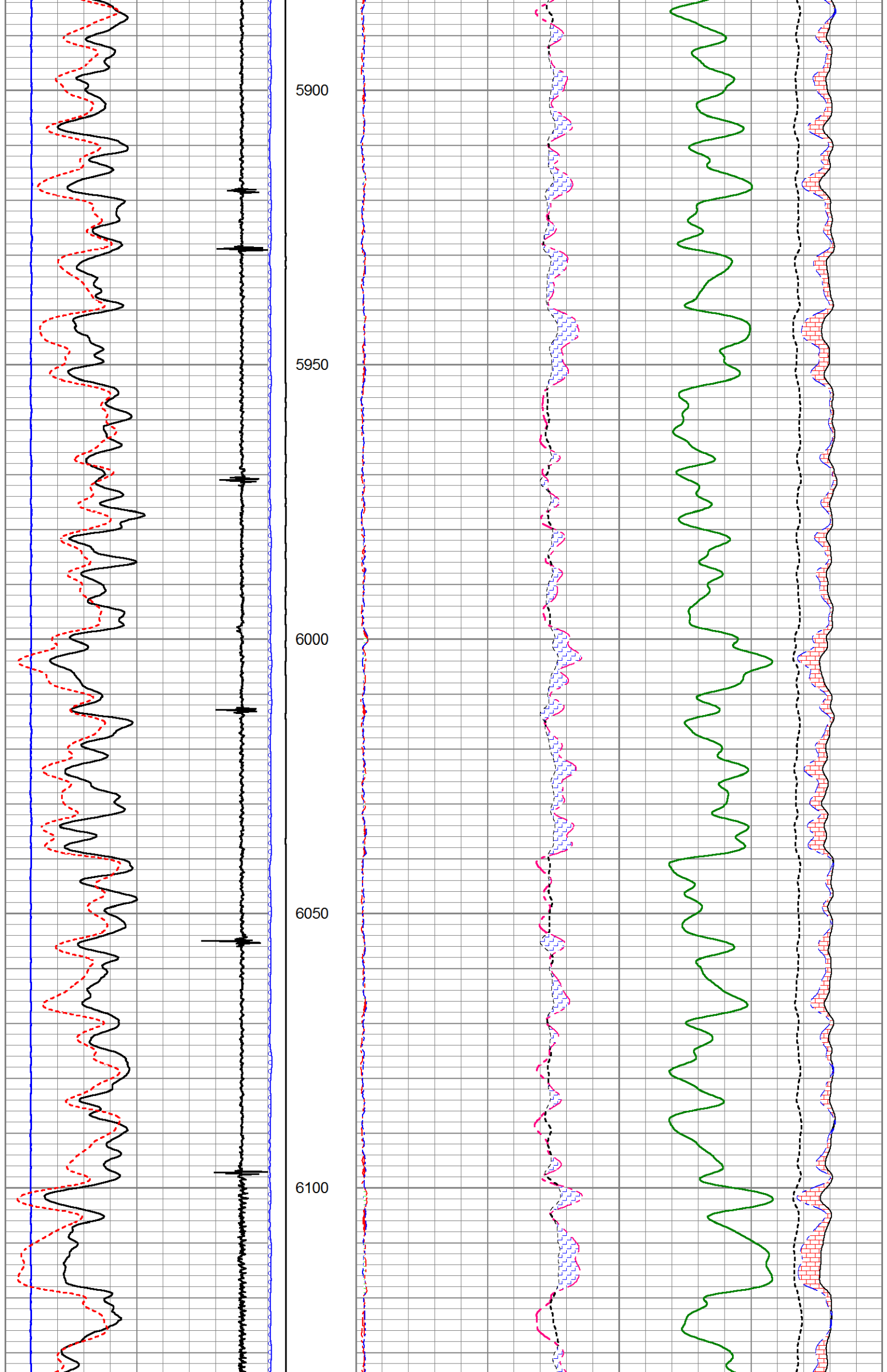


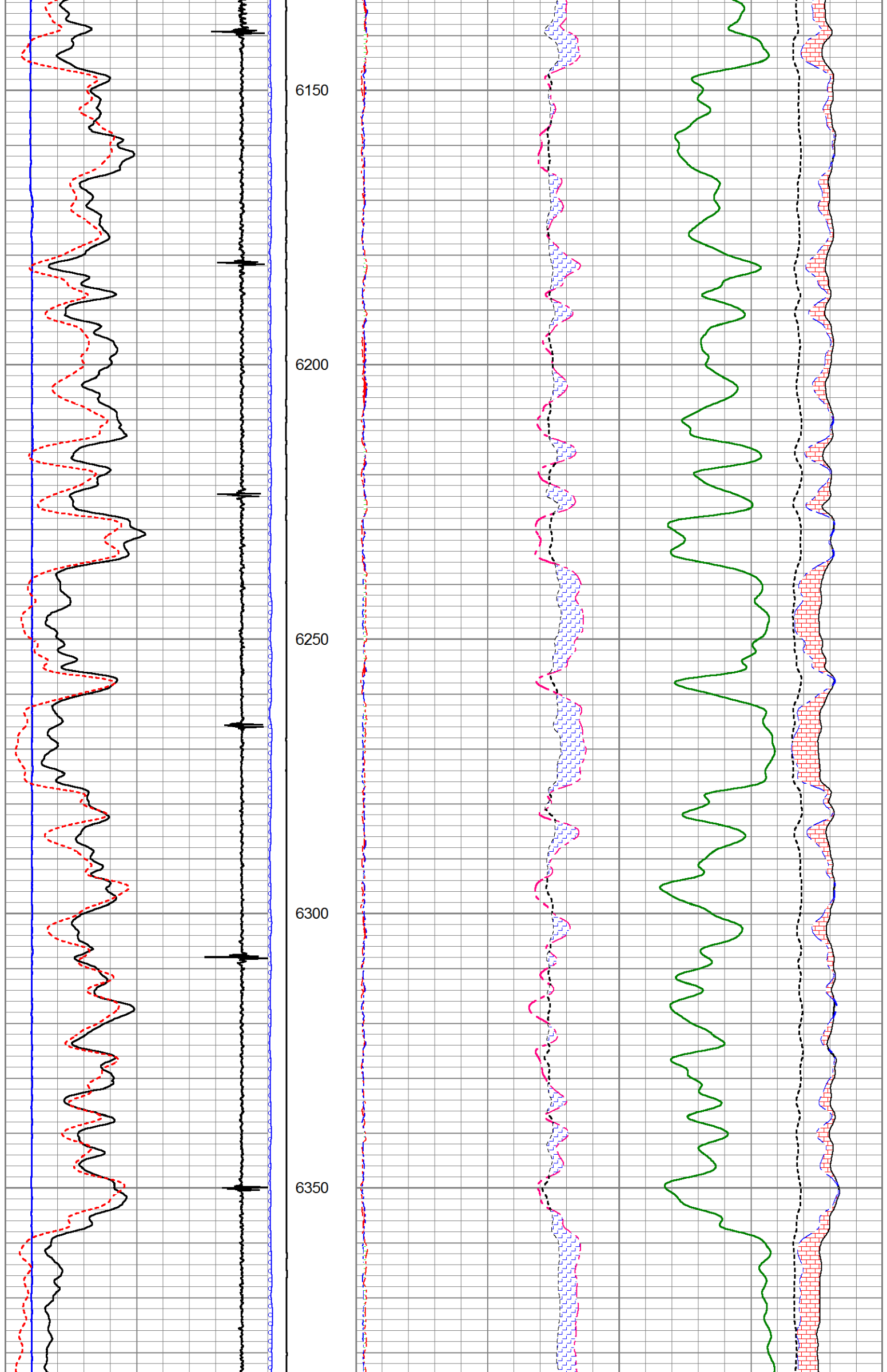


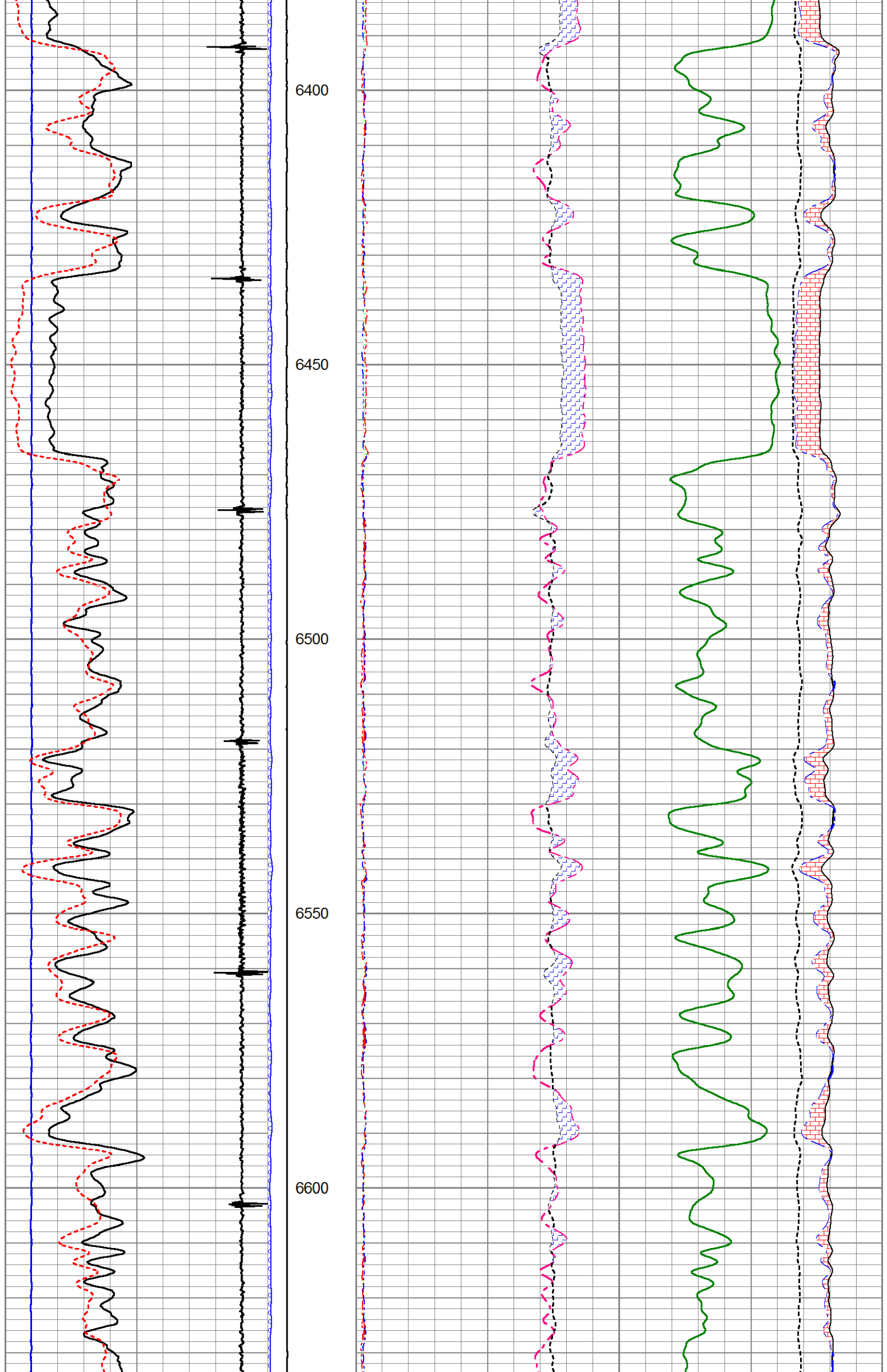


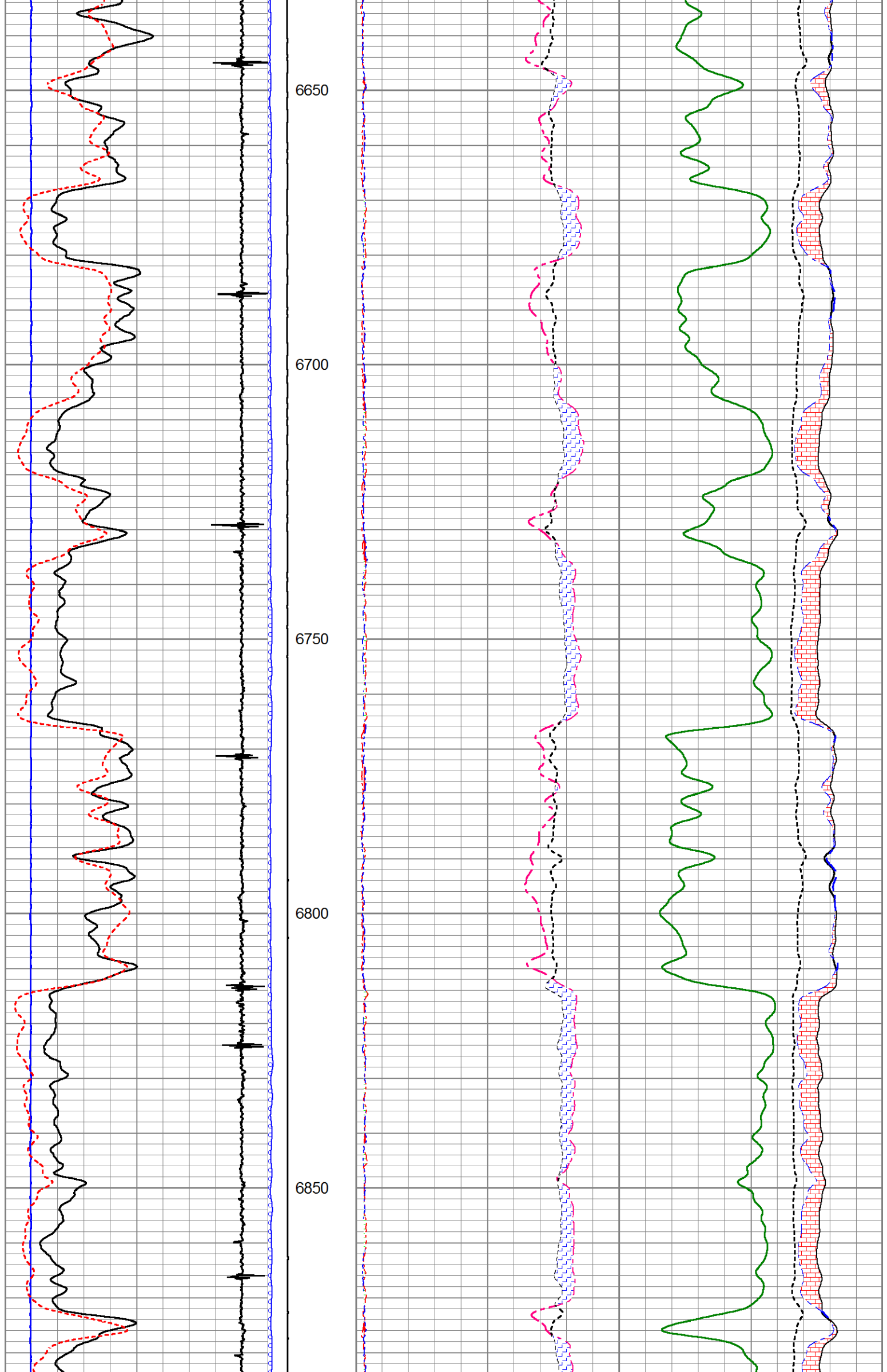


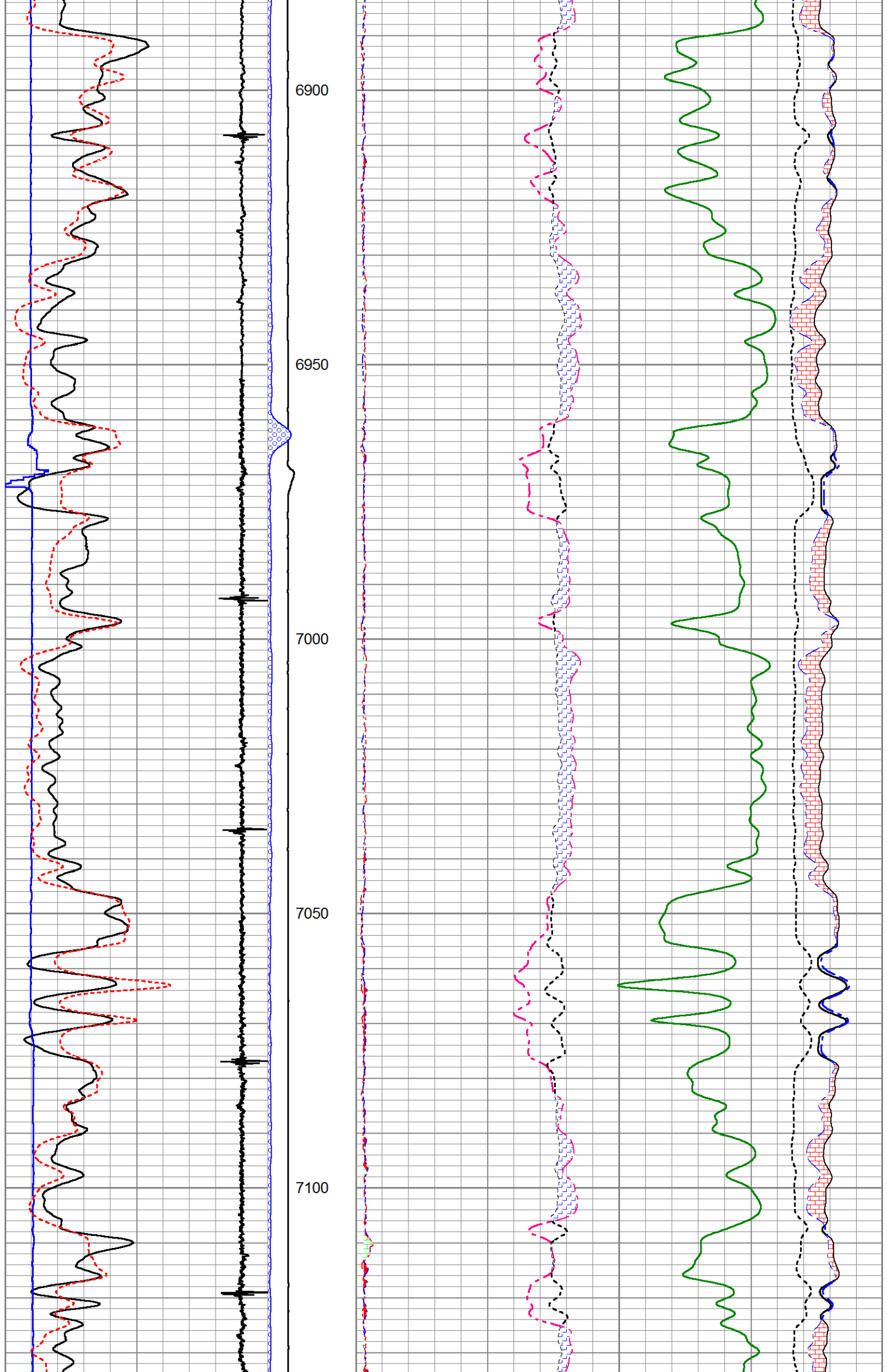


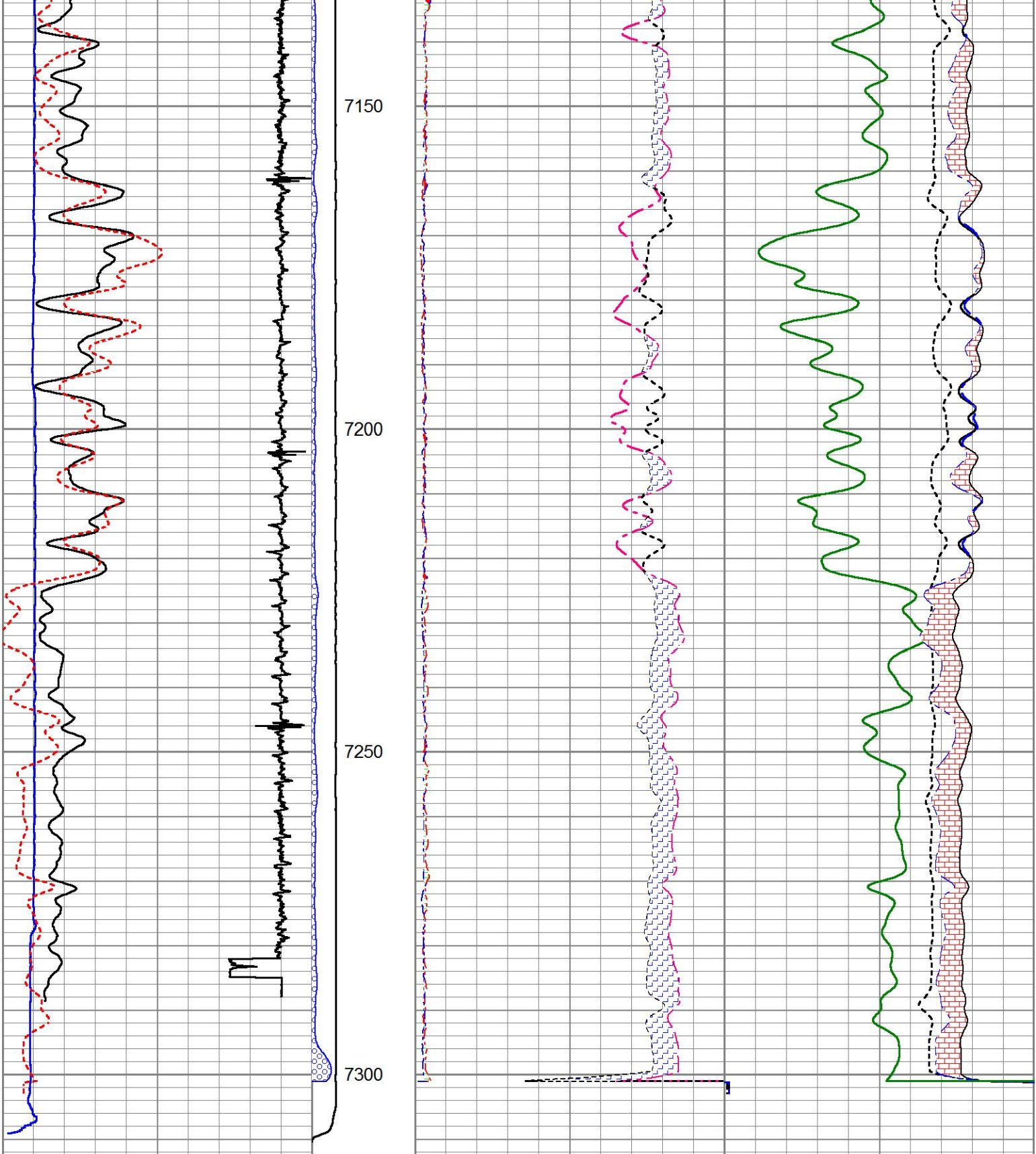












0	GR	200	LTEN	60	SGFF	0
2700	CCL	-300	0 (lb5000)	2	RNF (Ratio Near/Far)	0.5 100000
0	LSPD (ft/min)	200	0 OAI1100	1.65	RIN (Ratio Near/Far Inel)	0.65 60000
10	SGINear	40		0	NFTR (Near Fit Error)	100 60000
				0	FFTR (Far Fit Error)	100

MAIN PASS

HALLIBURTON

5" = 100'

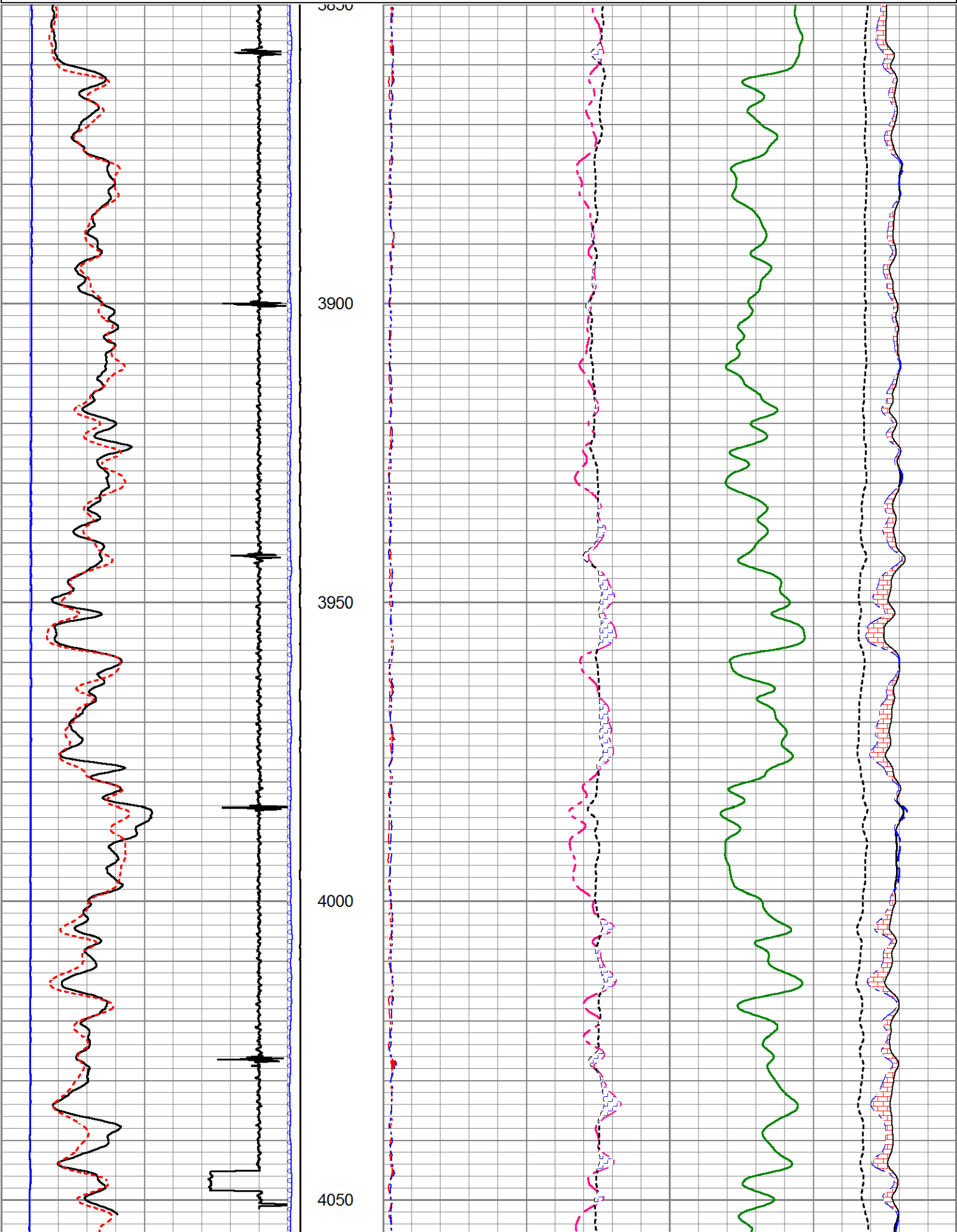
REPEAT PASS

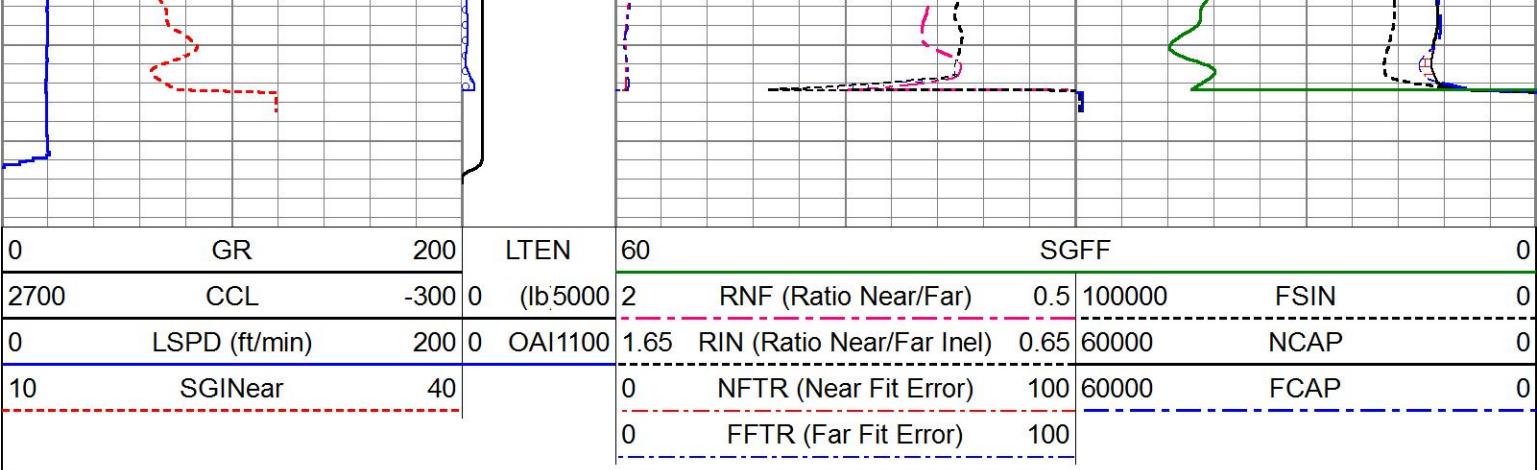
HALLIBURTON

5" = 100'

Database File	mr_b_34b_08_7_95.db		
Dataset Pathname	rmt_repeat1		
Presentation Format	!1!!rmt_rmti		
Dataset Creation	Mon Nov 28 00:35:35 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	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			





REPEAT PASS

HALLIBURTON

5" = 100'

Log Variables

DatabaseC:\ProgramData\Warrior\Data\mr_b_34b_08_7_95.db
Dataset field/well/run1/rmt_main/_vars_

Top - Bottom

BHSAL1	BHSAL2	BHTEMP_Src	BITSIZE	BORSAL	BOTTEMP	CASED?	CASEOD
1	0	ITEMPX	in 7.875	kppm 150	degF 210	Yes	in 4.5
CASETHCK	CASEWGHT	LTH	MAXAMPL	MINAMPL	MINATTN	MSGGN	MudWgt
in 0.5	lb/ft 11.6	Sandstone	mV 0	mV 1	db/ft 0.8	1	lb/gal 8.4
PERFS	POROS1	POROS2	PPT	RHOFC	SO	SRFTEMP	TDEPTH
0	1	0	usec 0	0.25	in 0	degF 0	ft 7303
UHSGC	USERFTT	ZREF					
NONE	usec/ft 0	MRayl 1.7					

Calibration Report

Database File mr_b_34b_08_7_95.db
Dataset Pathname rmt_main
Dataset Creation Mon Nov 28 01:00:18 2016

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					
H	Channel 60	Expected Value 60 +/-2	Amplitude 0.0356	FWHM 5.76	Tol. <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			
	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	21.16		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
GR	18.91		TTTCU-002 (11214503) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
RmtTFGT RmtTNGT	8.25 7.75		XHU-003 (12146425) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
RmtTFGT RmtTNGT	8.25 7.75		RMTI-A (12095949) Halliburton RMTI Tool	14.00	2.13	77.00

RmtFP5V	0.00				
RmtNFwvMcsPh	0.00				
RmtCommFWar	0.00				
LLMTEN	0.00				
<div><div></div><div><div>Dataset:</div><div>mr_b_34b_08_7_95.db: field/well/run1/rmt_main</div></div><div><div>Total length:</div><div>24.73 ft</div></div><div><div>Total weight:</div><div>185.00 lb</div></div><div><div>O.D.:</div><div>2.13 in</div></div></div>					

Company	URSA OPERATING COMPANY LLC				
Well	MONUMENT RIDGE B 34B-08-7-95				
Field	PARACHUTE				
County	GARFIELD		State	CO	
HALLIBURTON	RESERVOIR MONITORING TOOL ELITE				