

HALLIBURTON

RESERVOIR MONITOR
TOOL - ELITE

Company URSA OPERATING CO., LLC.		Company URSA OPERATING CO., LLC.	
Well BAT 24C-18-07-95		Well BAT 24C-18-07-95	
Field PARACHUTE		Field PARACHUTE	
County GARFIELD	State CO	County GARFIELD	State CO
Permanent Datum GROUND LEVEL Elevation 5441'		Sec: 18 Twp: 07S Rge: 95W	
Log Measured From KB , 17 Ft. above perm. datum		Other Services CBL GAUGE RING	
Drilling Measured From KB		API No.: 05-045-22837-0000 Serv #: 902507598	
Location: SURFACE HOLE LOCATION: 0246' FSL & 0824' FEL		Bottom Hole Location: 0520' FSL & 1951' FWL	
Date @ Time Logged 19 JUNE 2015	Type Fluid in Hole WATER	Elevation 5458' D.F. 5457' G.L. 5441'	
Run No. ONE	Density of Fluid 8.4#	FULL	
Depth - Driller 7127'	Fluid Level	SEE LOG	
Depth - Logger 6860'	Cement Top Est. Logged	10971668 / G.J.	
Bottom - Logged Interval 6860'	Equipment / Location	D. SOLIS	
Top - Log Interval 3545'	Recorded by	UNATTENDED	
Max. Recorded Temp. 226 DEG F	Witnessed by	Liner	
CEMENTING DATA Surface	Protection String	N/A	
Date / Time Cemented N/A	String	N/A	
Primary / Squeeze N/A	Production String	N/A	
Expected Compressive Strength psi@ hrs	psi@ hrs	psi@ hrs	psi@ hrs
Cement Volume /	/	/	/
Cement Type / Weight Formulation /	/	/	/
Mud Type / Mud Wgt. /	/	/	/
Borehole Record		Casing & Tubing Record	
Run Number ONE	Bit From 12.25" To 1880' Size 8.625" Weight 32.0# From SURFACE To 1880'	TWO 7.8758" 1880' 7127' 4.5" 11.6# SURFACE 7127'	

<<< Fold Here >>>

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

HALLIBURTON CBL LOG DATED: 19 JUNE 2015 IS THE PRIMARY DEPTH REFERENCE FOR THIS WELL.

GR-CBL-RMT RAN IN COMBINATION.

LOG INTERVALS PER CUSTOMER REQUEST.

SHORT JOINTS @: 2996' - 3006', 5490' - 5500', AND 6388' - 6398'.

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES.

Service Ticket No.	902507598	API No.	05-045-22837-0000	PGM Ver	14.11.12001
The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client					
EQUIPMENT DATA					
TELEMETRY		CEMENT BOND TOOL		RESERVOIR MONITOR TOOL	
Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	11495480	Serial No.	11817843	Serial No.	12095949
Model No.	TTTC-U-002	Model No.	CBL-M	Model No.	RMTI-A
Diameter	1.688"	Diameter	2.75"	Diameter	2.125"
LOGGING DATA					
General Data					
Pass	Depths		Well Head	Speed	Logging Run Comments
No	From	To	Pressure	Ft/Min	

No.	Depth	Temperature	Pressure	Time	MAIN LOG SECTION			
ONE	6860'	3545'	0	25				
	GAMMA RAY		NEAR BORE SI (SGBN)		RATIO (RNF)		SGIN	
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ONE	0	200	200	0	2	0.5	60	0
DIRECTIONAL INFORMATION								
Maximum Deviation		N/A	deg. @	N/A	KOP	N/A		

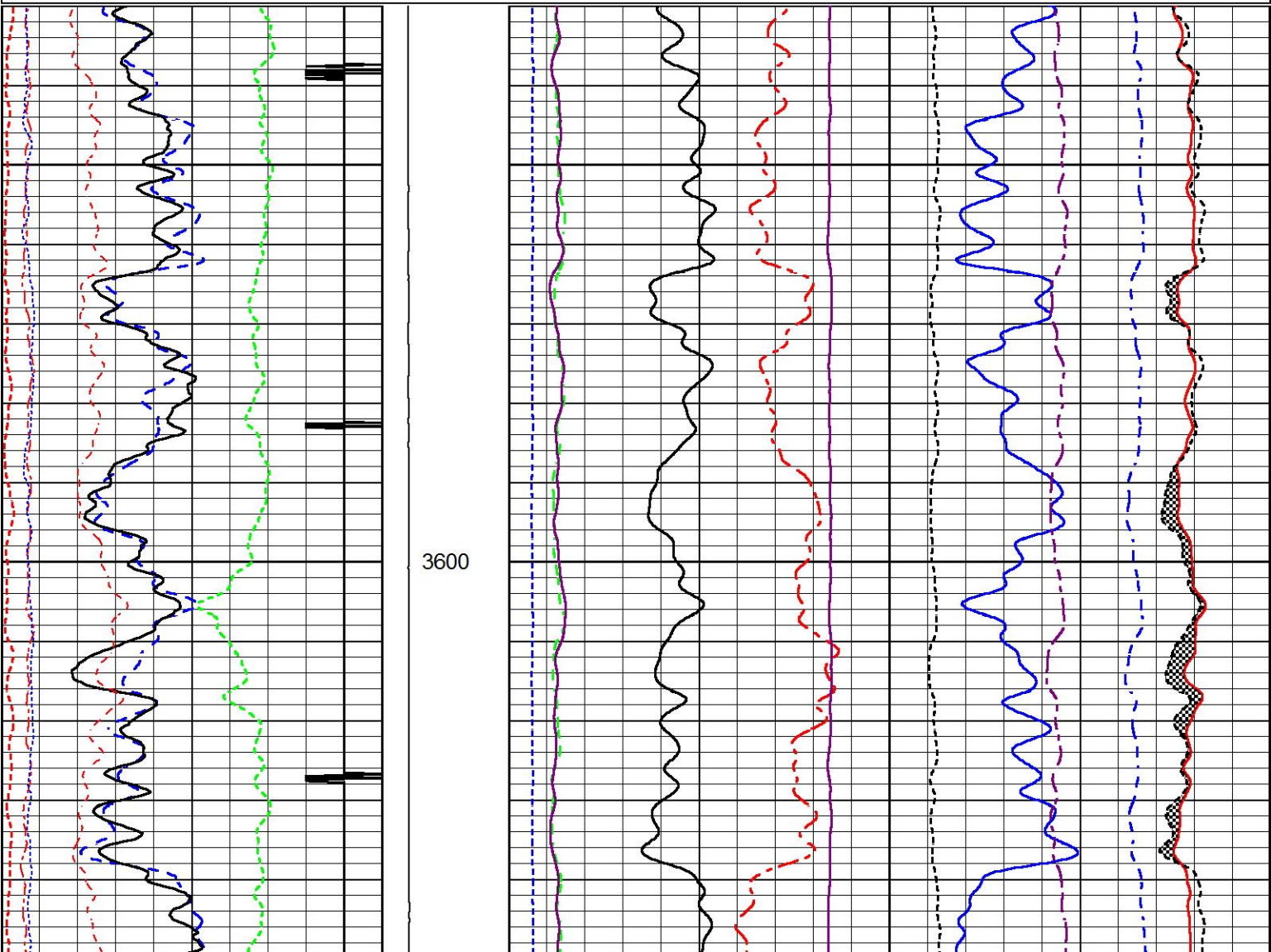
HALLIBURTON

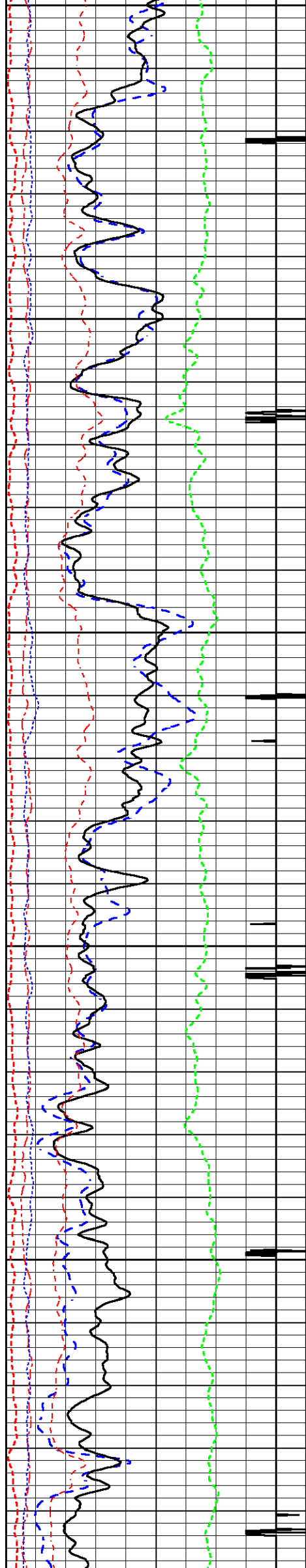
MAIN LOG SECTION

5" = 100'

Database File	bat_24c_cmb.db
Dataset Pathname	MAIN1
Presentation Format	RMTE_M~1
Dataset Creation	Fri Jun 19 14:36:45 2015
Charted by	Depth in Feet scaled 1:240

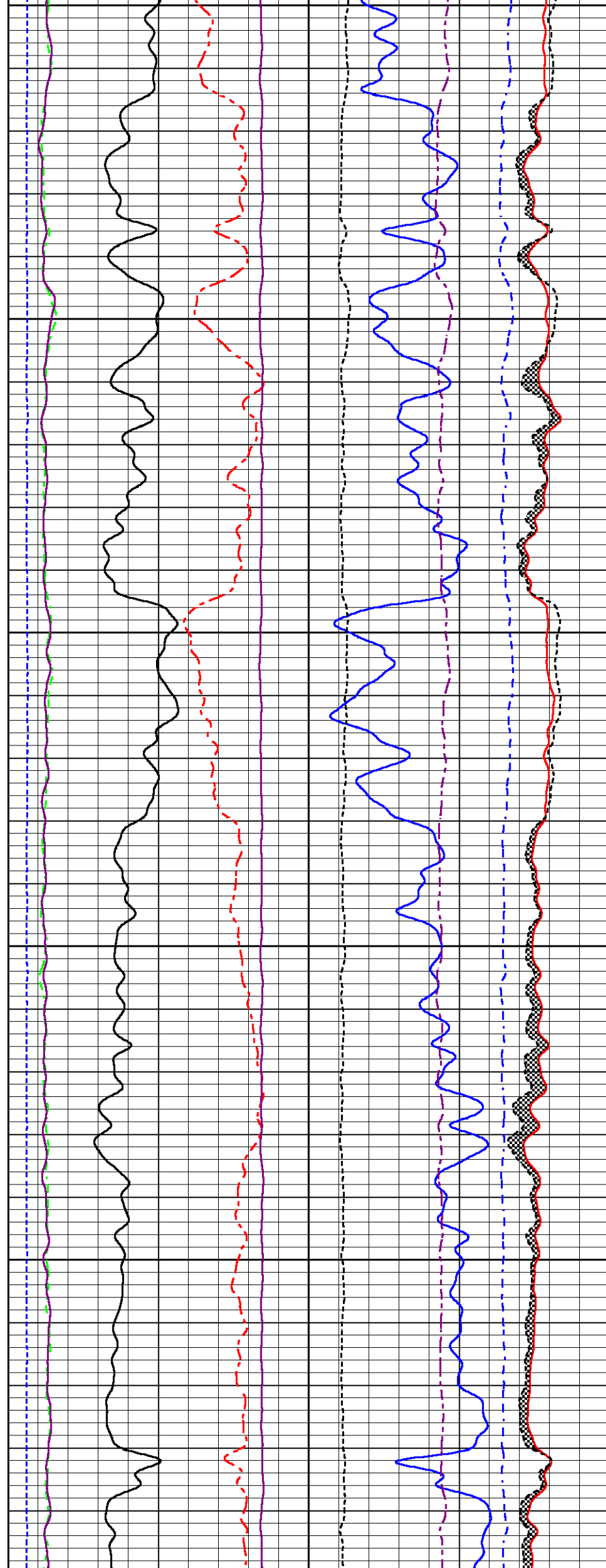
200	Near Bore Si (SGBN)	0	TENSION	60	SGIN	0
0	OAI	100		2	RATIO (RNF)	0.5
10	FAR FIT ERR (SGFF)	40		0	RIN	15
0	GAMMA RAY (GAPI)	200		0	RICF	6
0	NEAR FIT ERR (SGFN)	100		0	H YIELD (YH2)	1
-540	CCL	60		0	H YIELD (YH1)	1
0	IN FIT ERR (CFTR1) NEAR	1			INOX2	50000
0	IN FIT ERR (CFTR2) FAR	1			-1500	1500
						-1000





3700

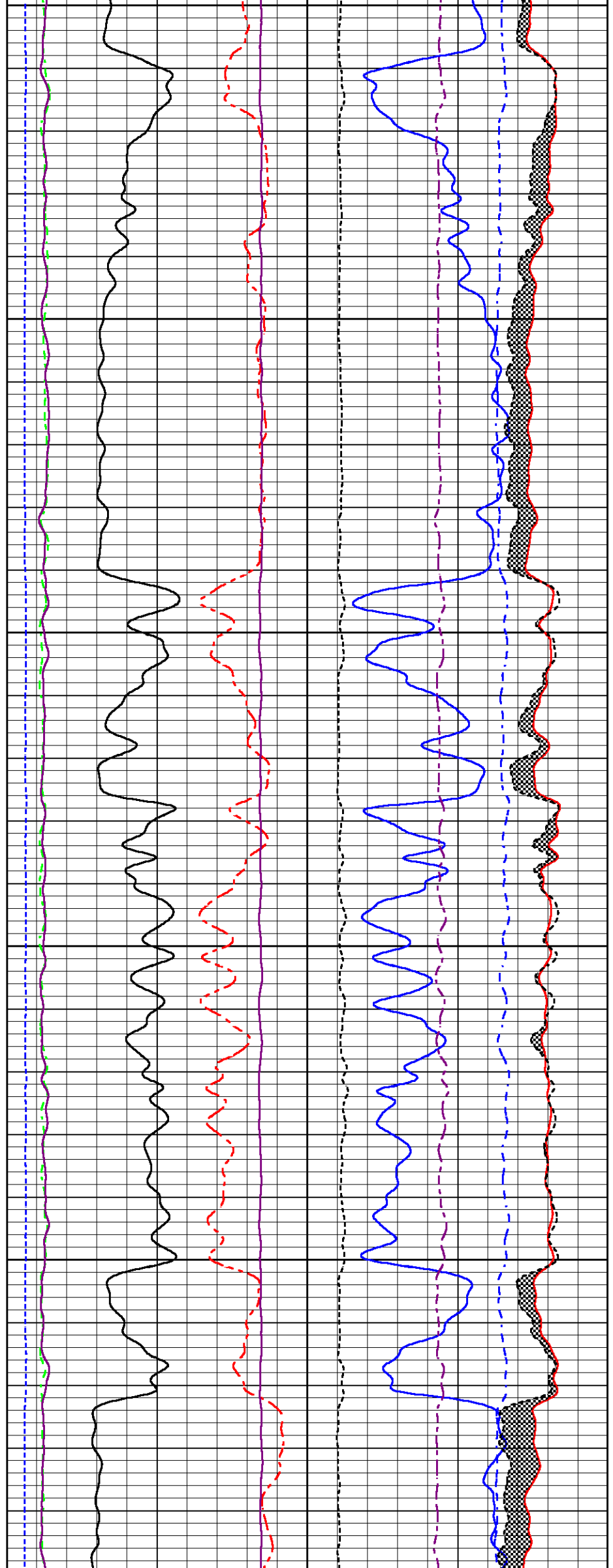
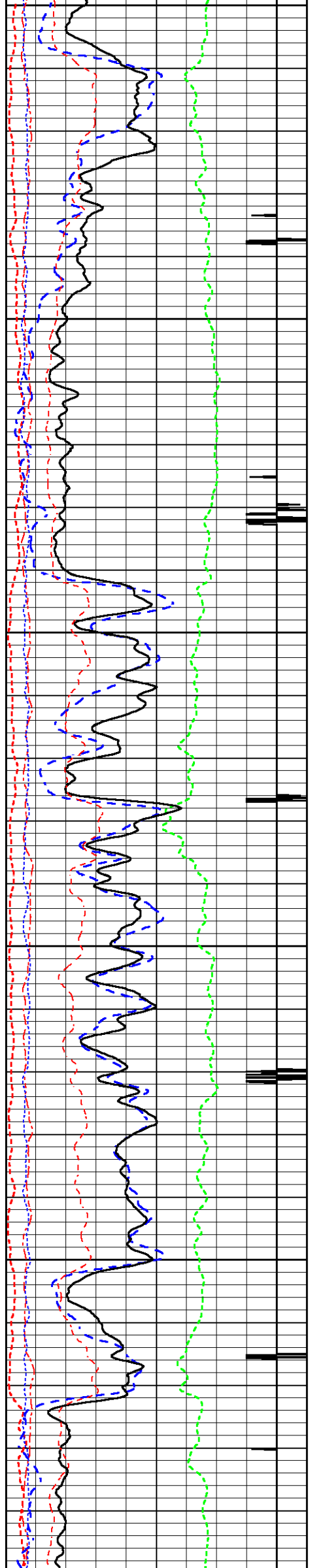
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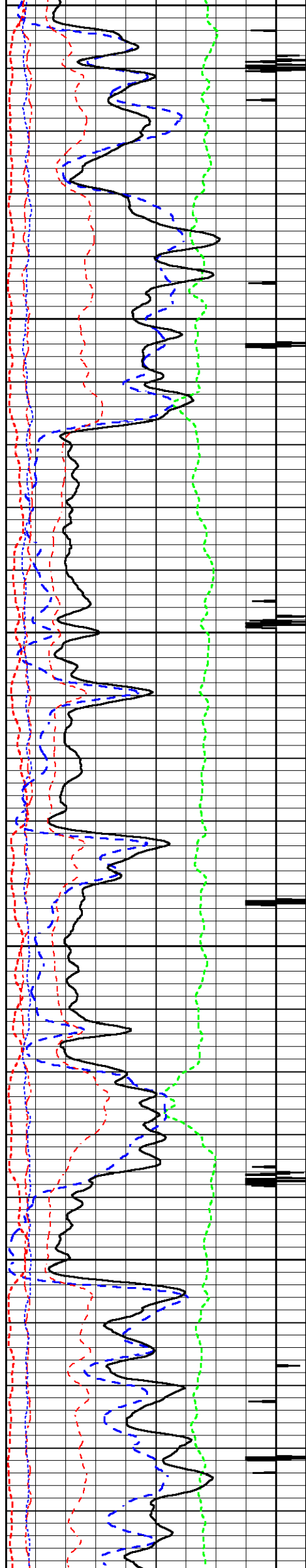


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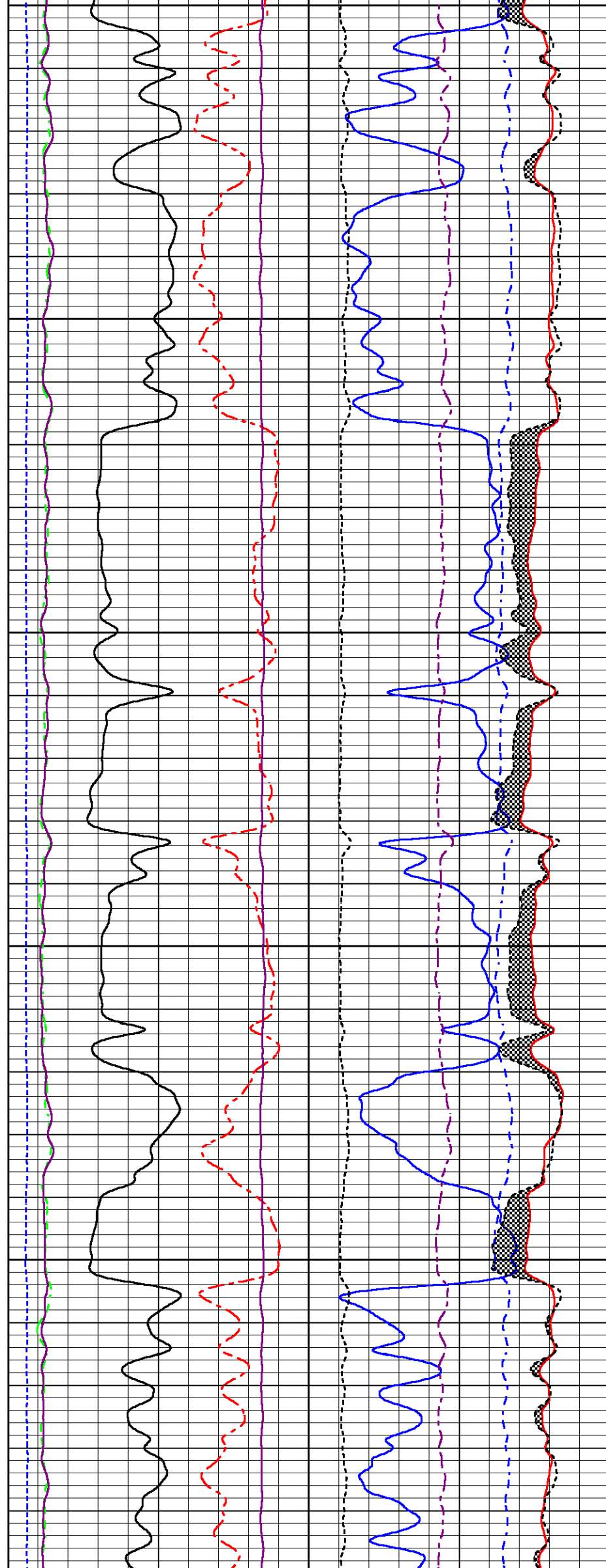
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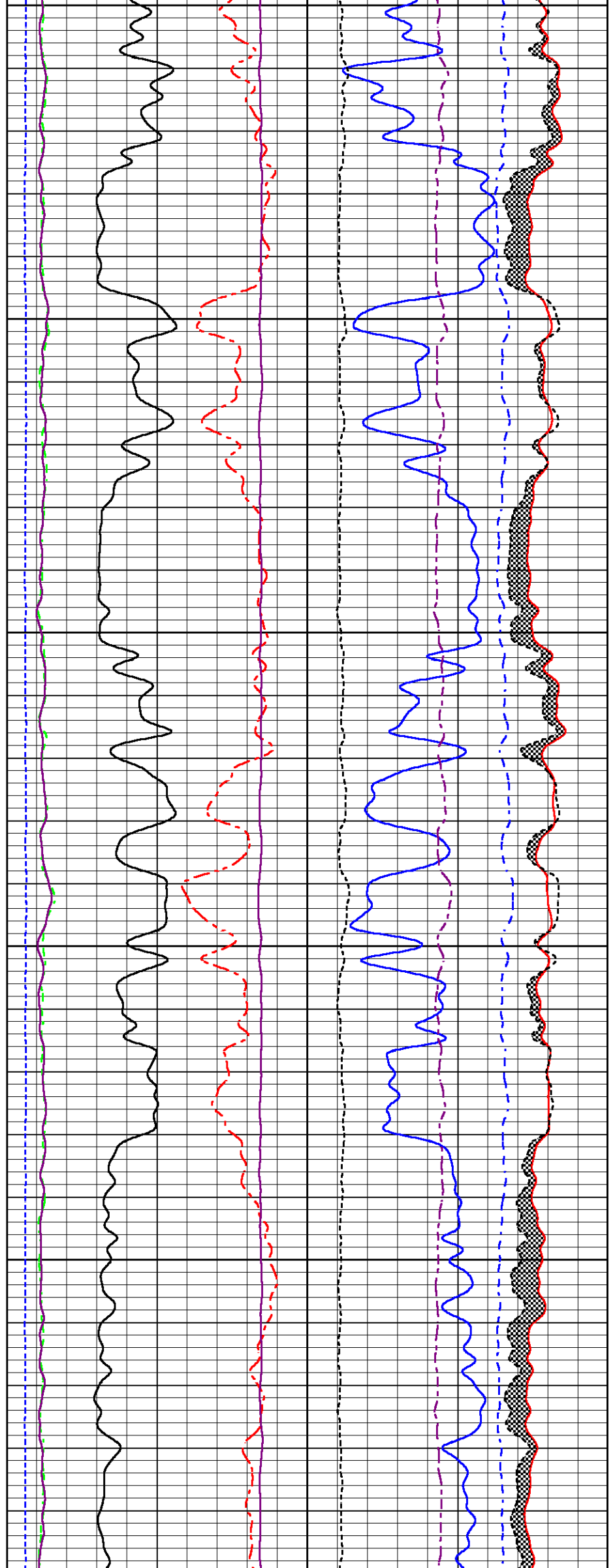
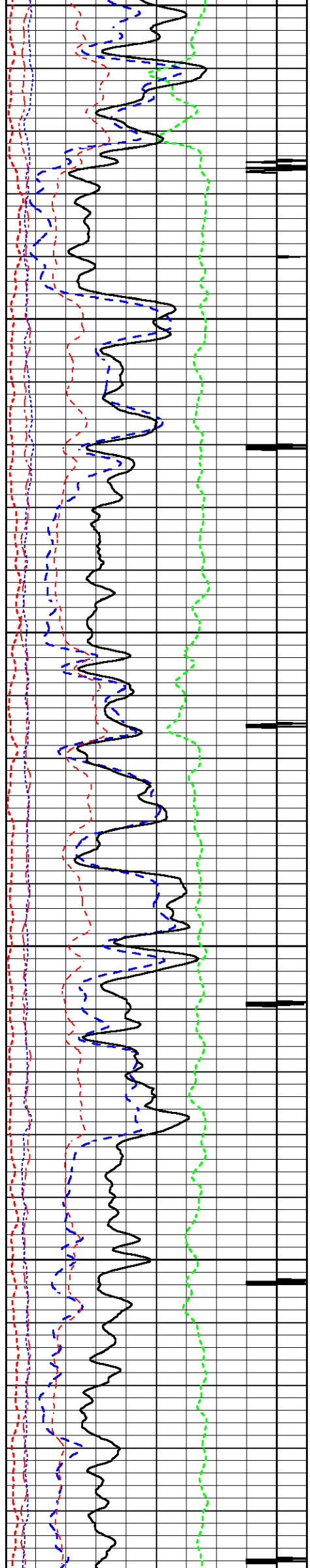
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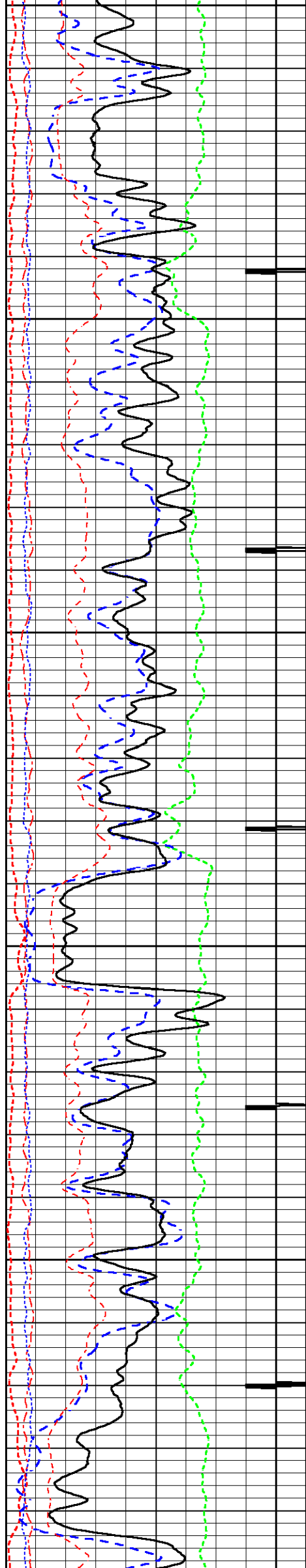


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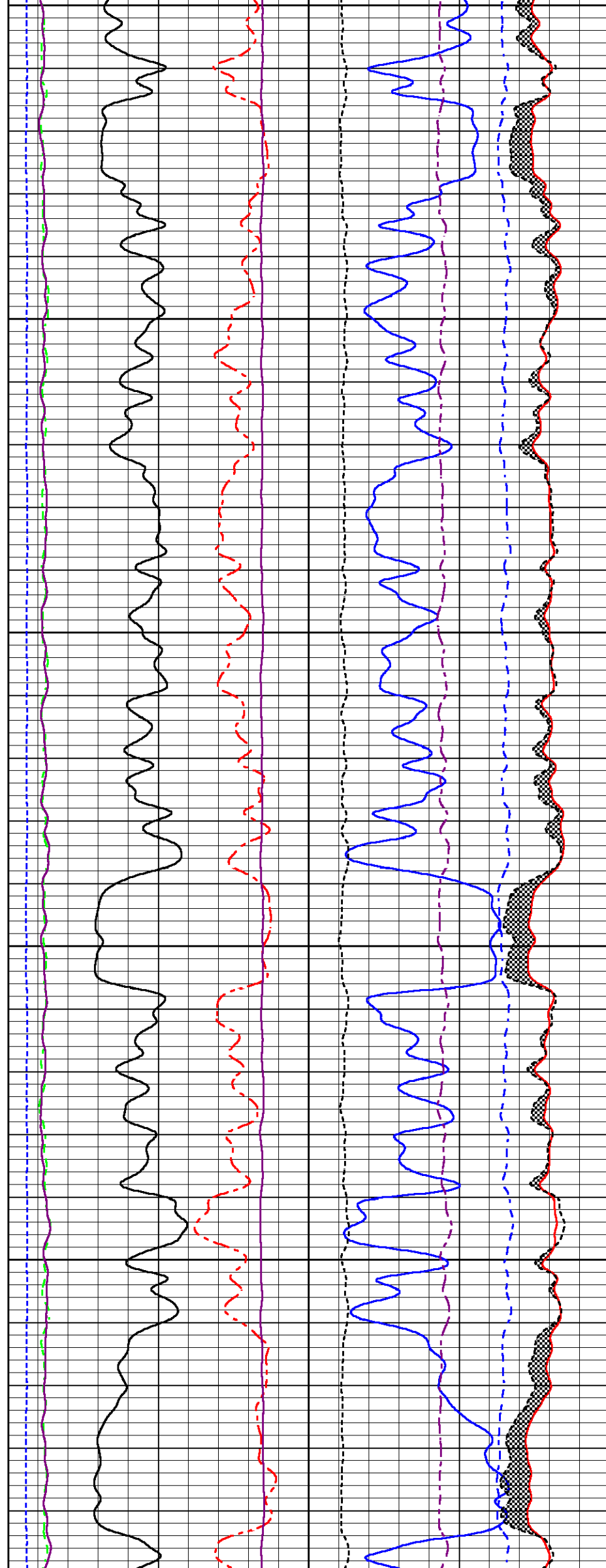
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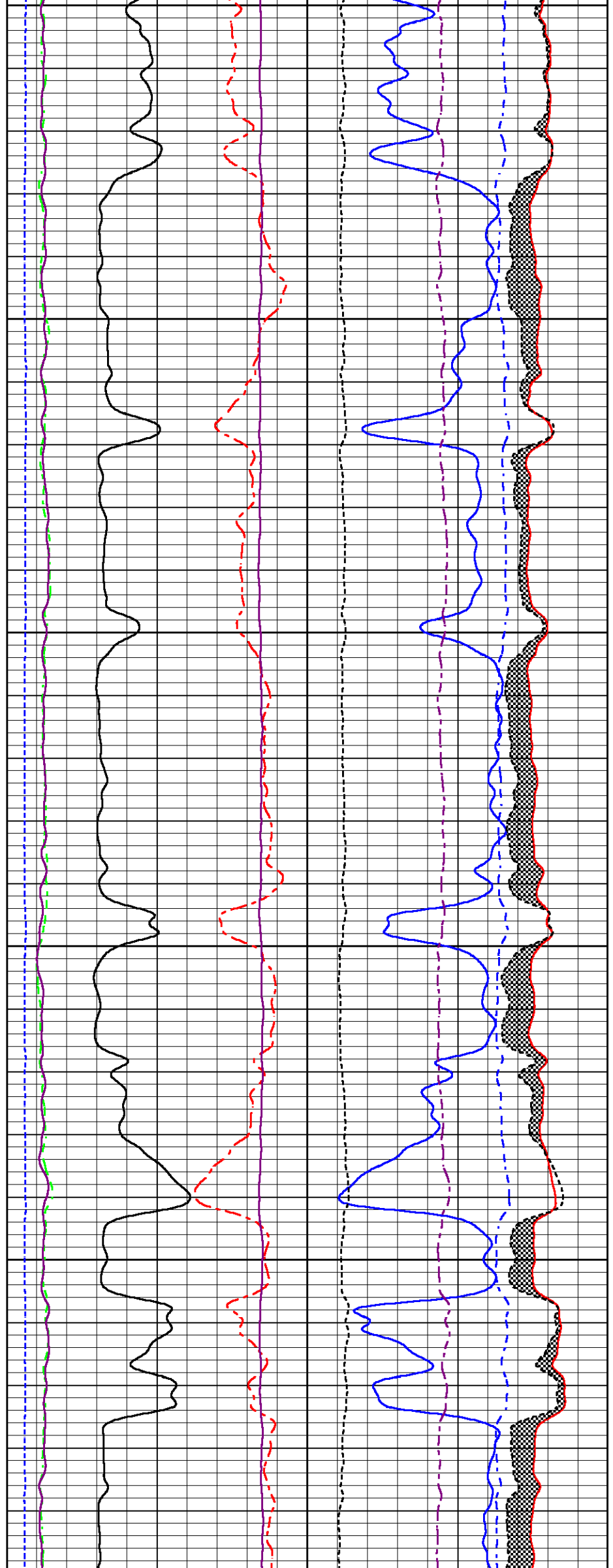
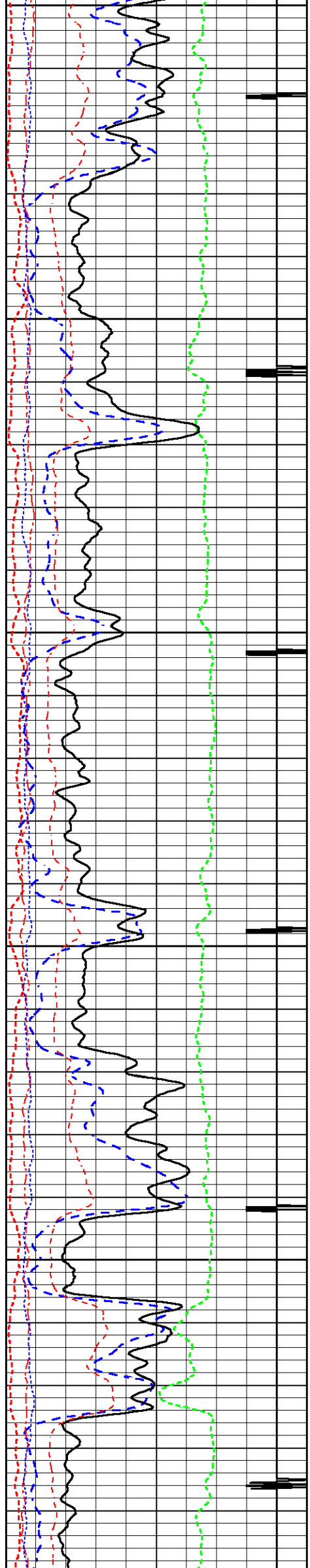
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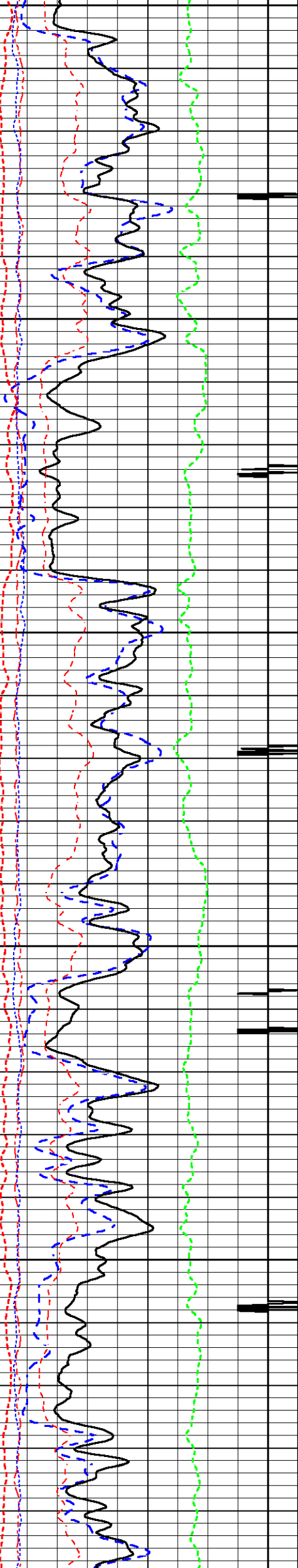


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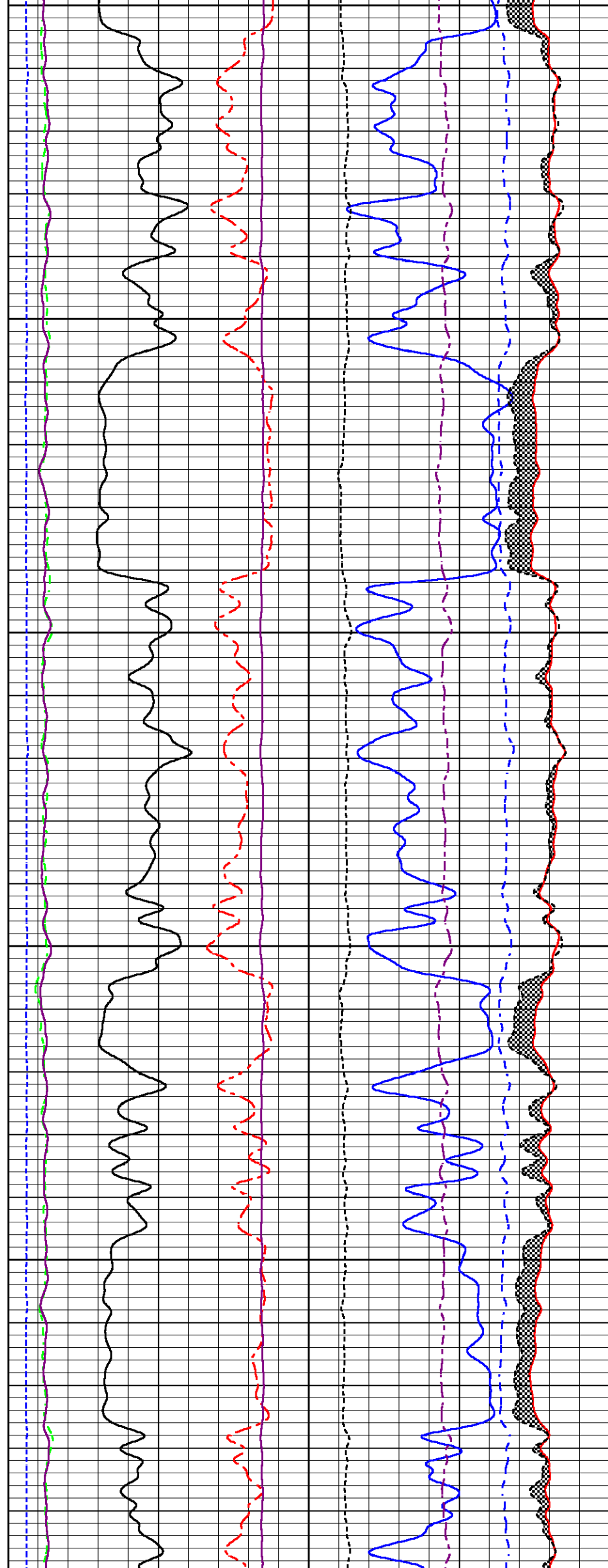
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5200

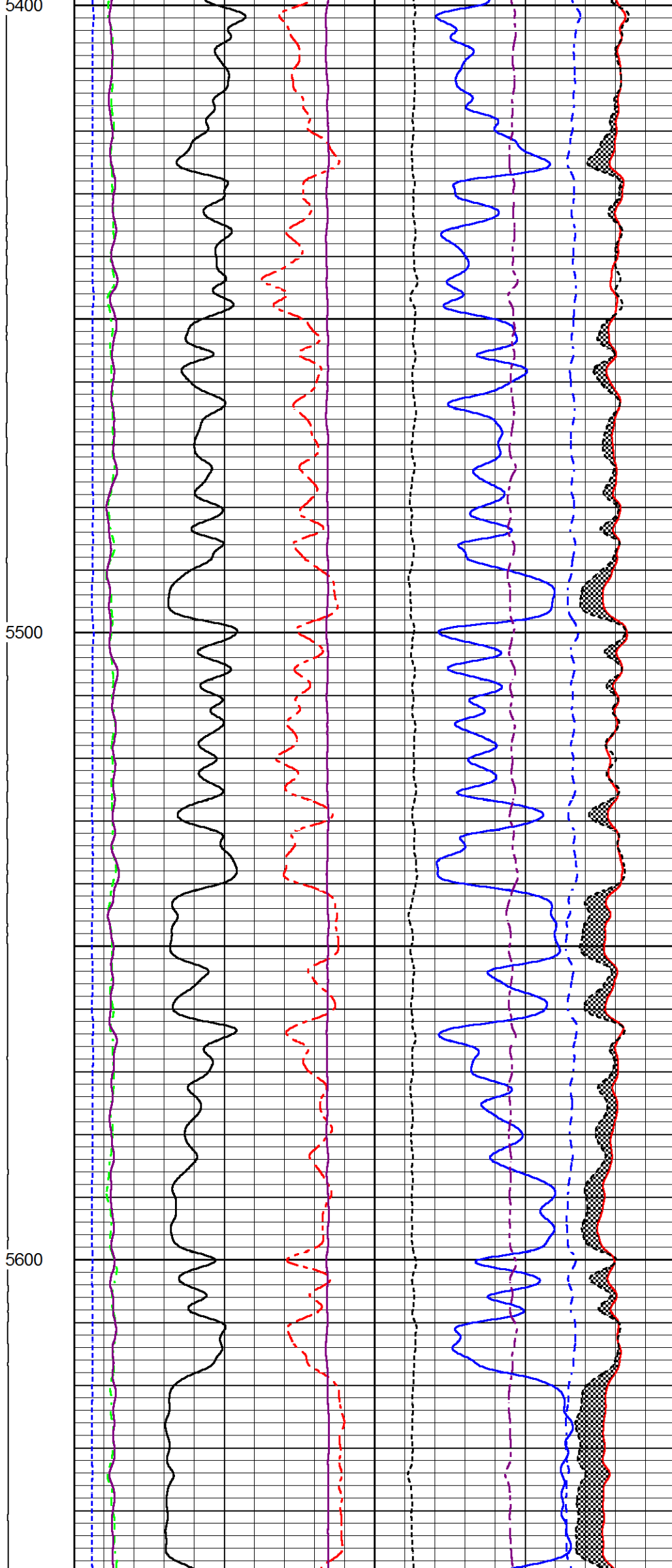
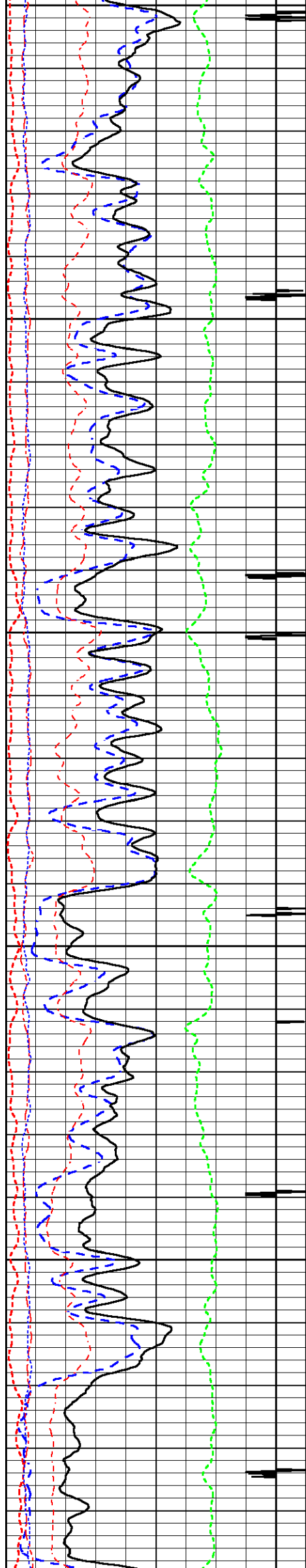
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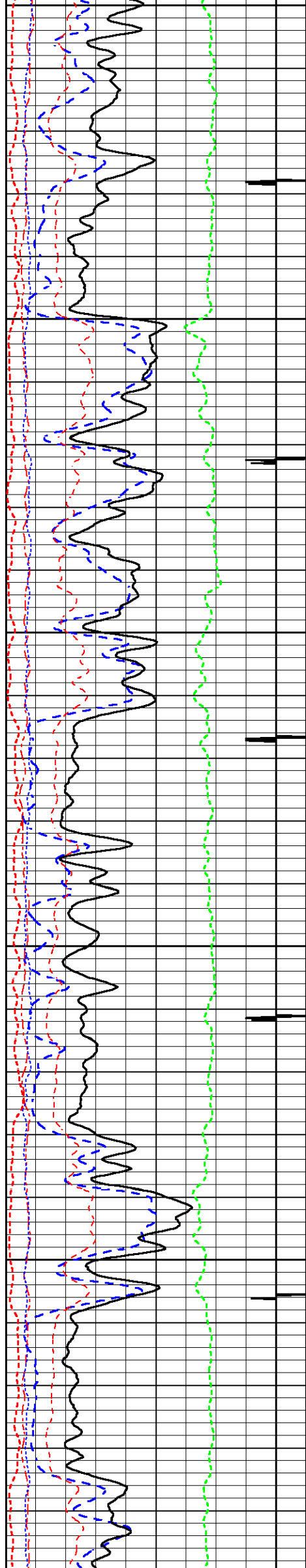


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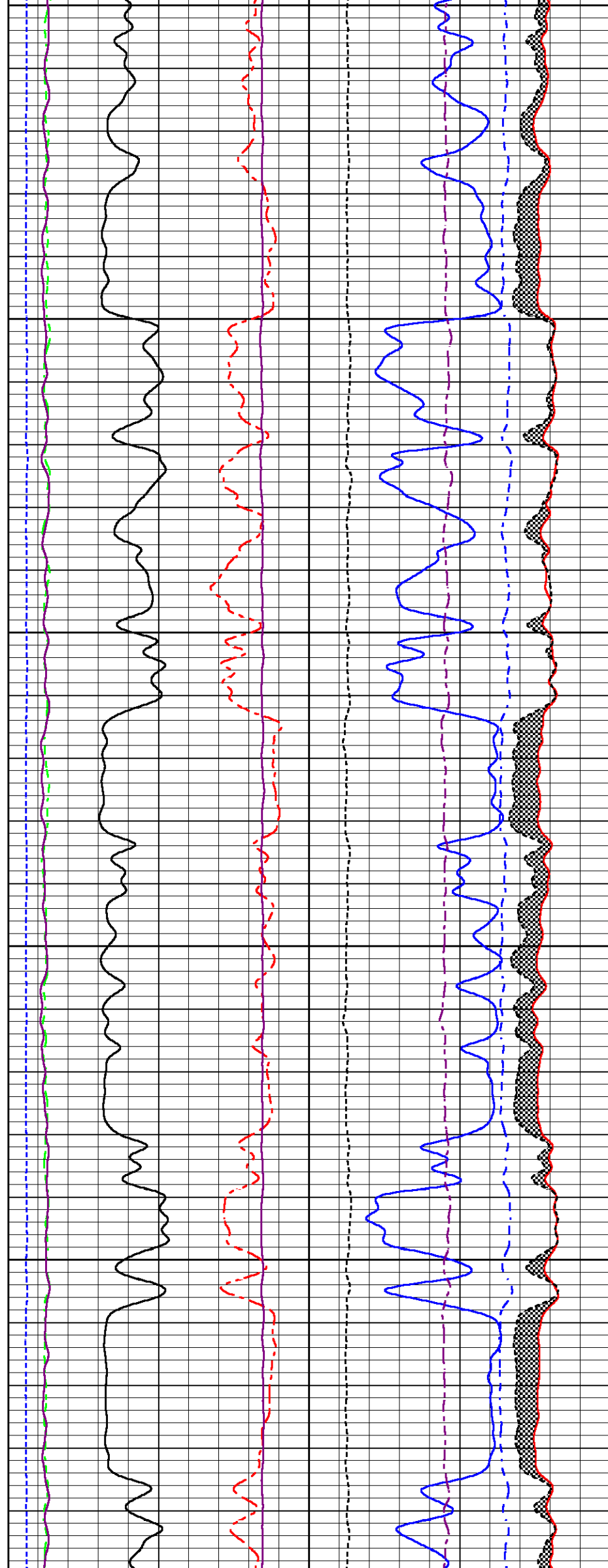
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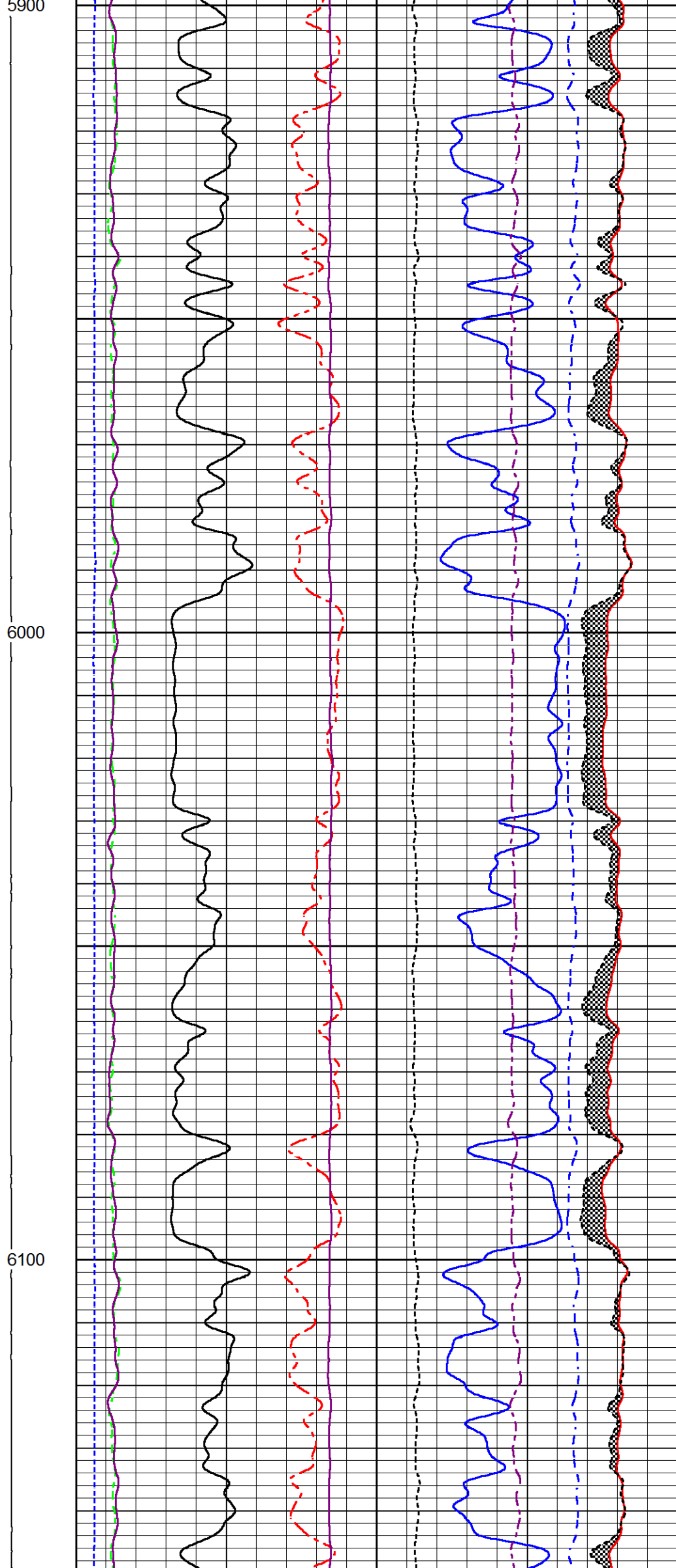
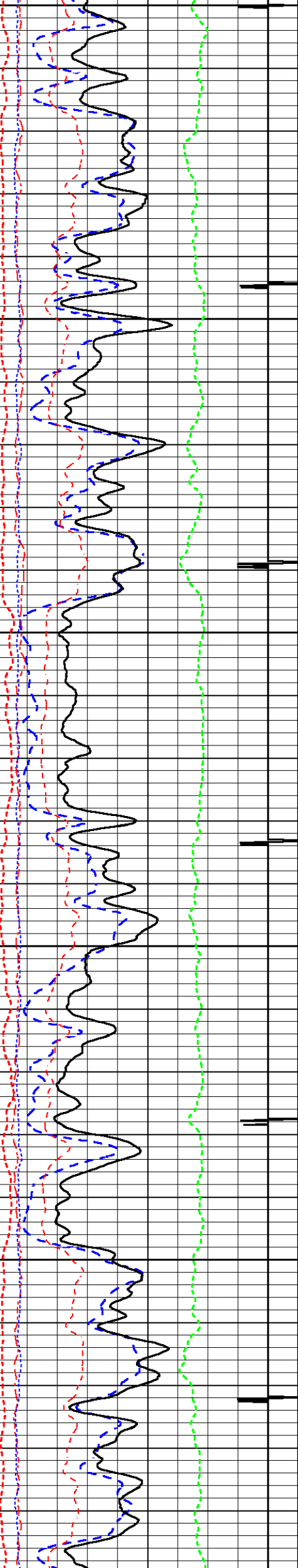


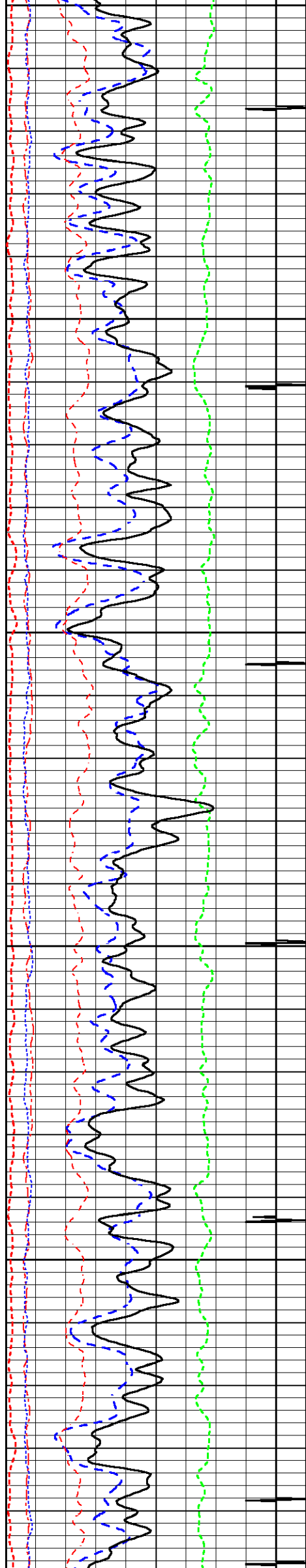


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5800

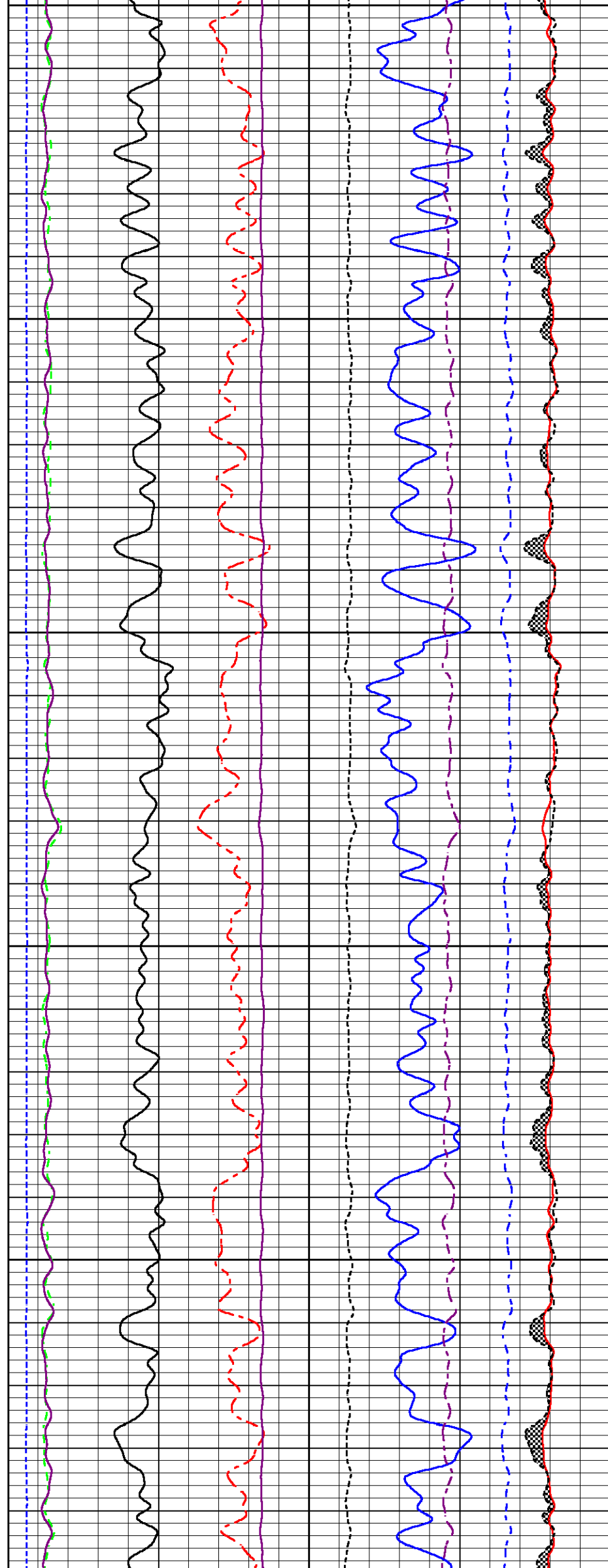


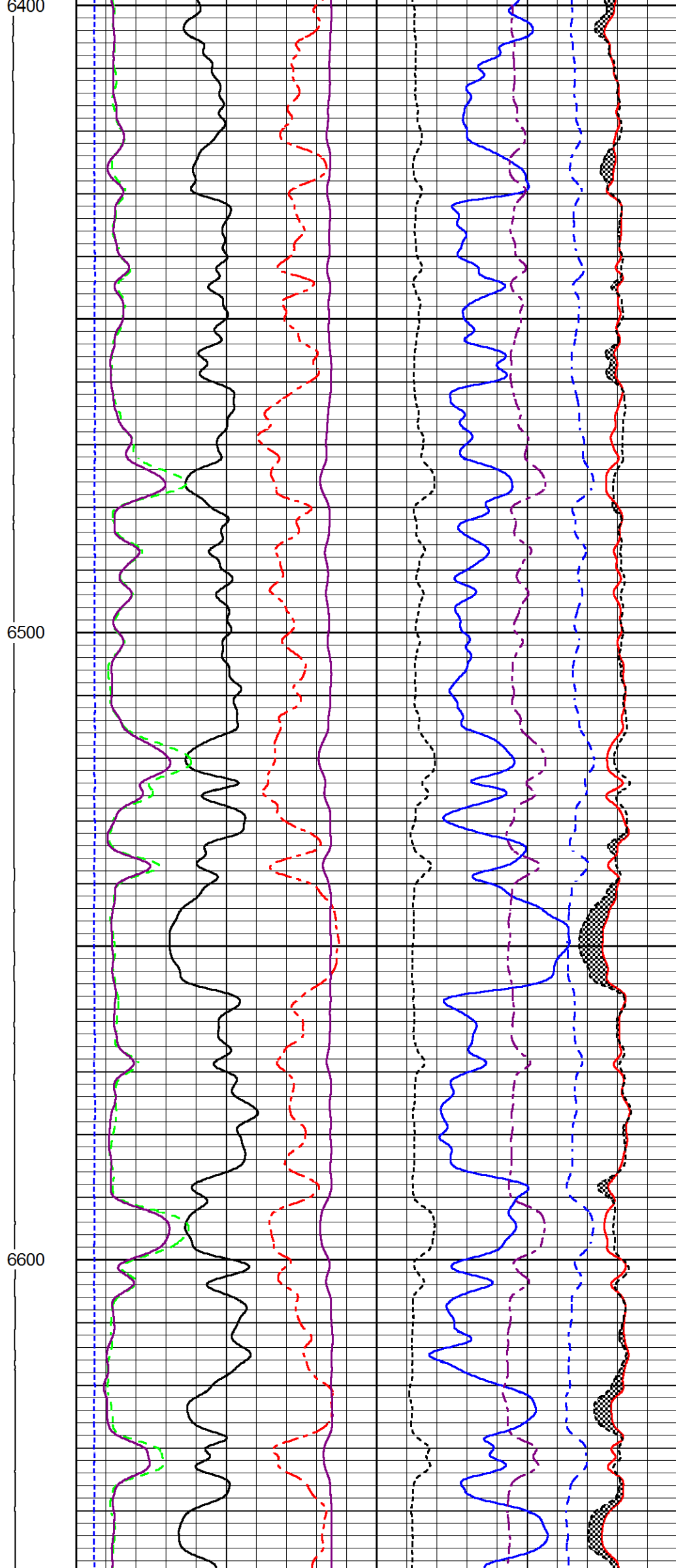
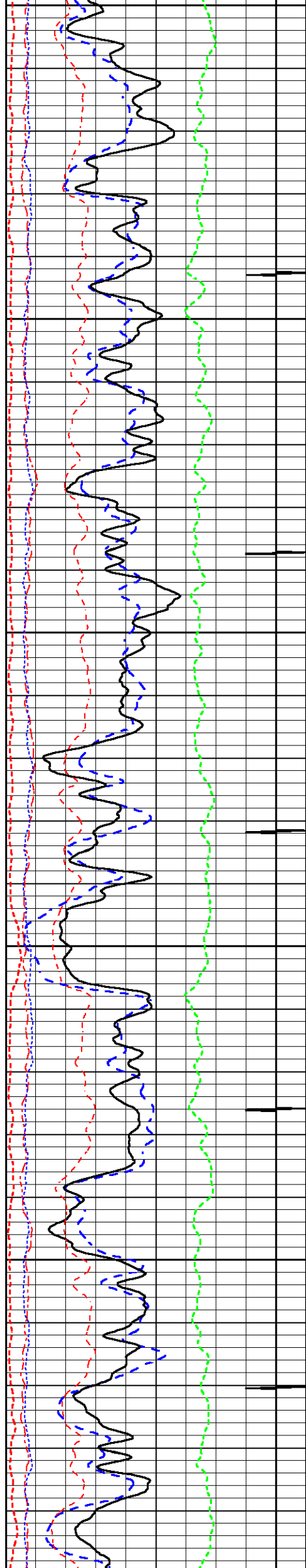


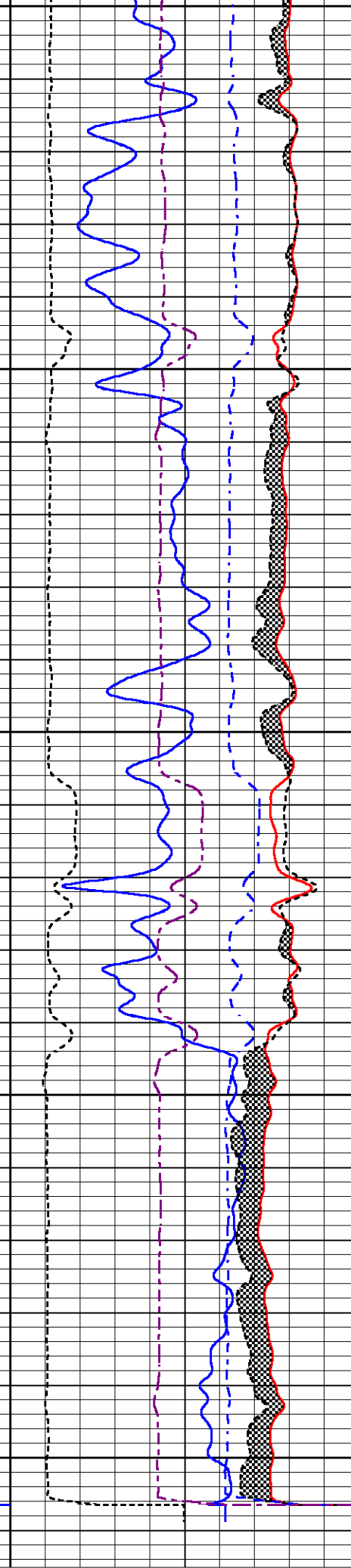
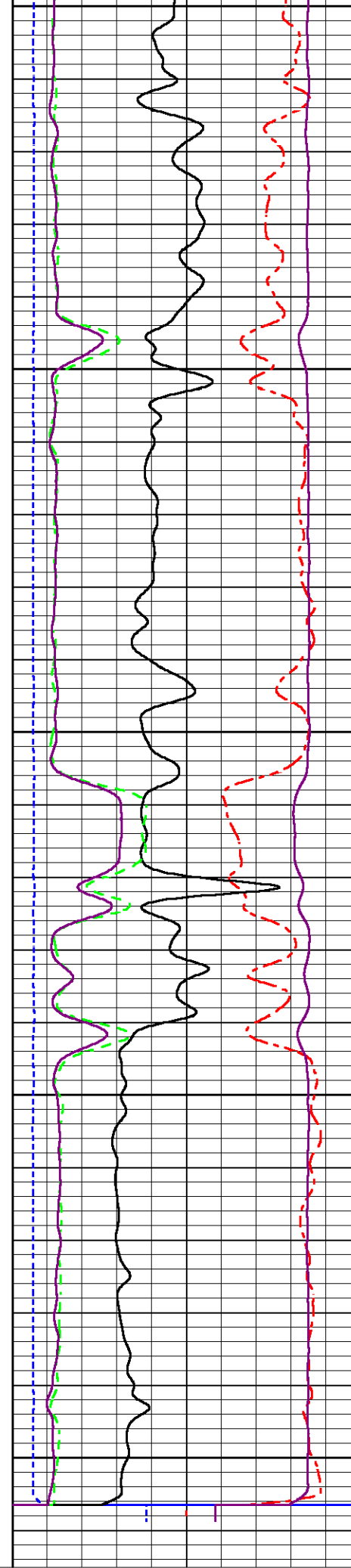
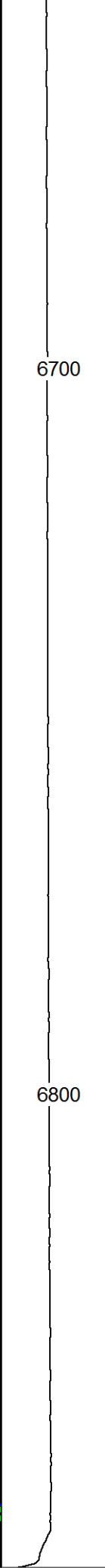
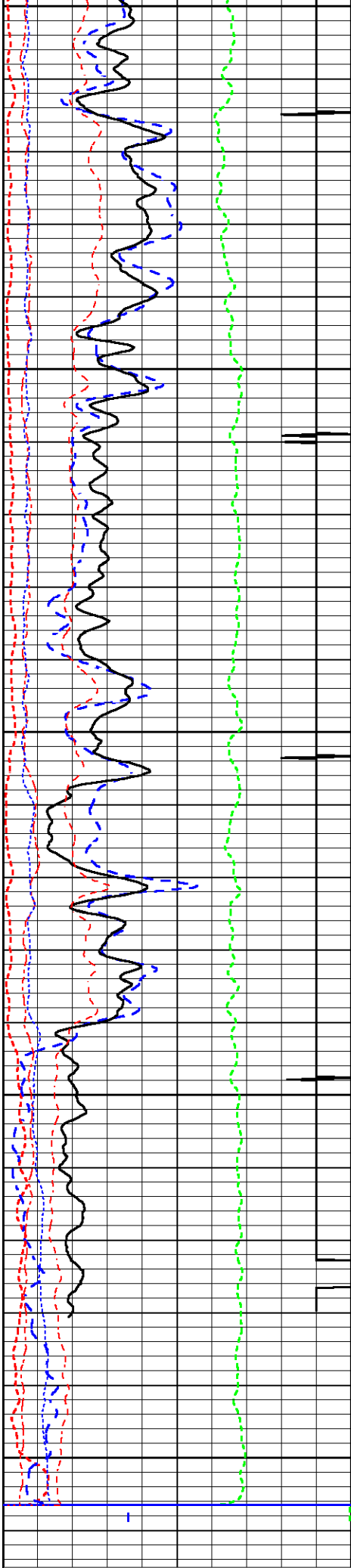


6200

6300







200	Near Bore Si (SGBN)	0
0	OAI	100
10	FAR FIT ERR (SGFF)	40
0	GAMMA RAY (GAPI)	200
0	NEAR FIT ERR (SGFN)	100
-540	CCL	60
0	IN FIT ERR (CFTR1) NEAR	1

TENSION

60	SGIN	0
2	RATIO (RNF)	0.5
0	RIN	15
0	RICF	6
0	H YIELD (YH2)	1
0	H YIELD (YH1)	1
	INOX2	

60000	Near Counts (NCAP)	0
60000	Far Counts (FCAP)	0
100000	FAR INTEL CT (FSIN)	0
10000	NEAR INTEL CT (NSIN)	0
50000	ET INL NEAR (NNII)	-1000

MAIN LOG SECTION

HALLIBURTON

5" = 100'

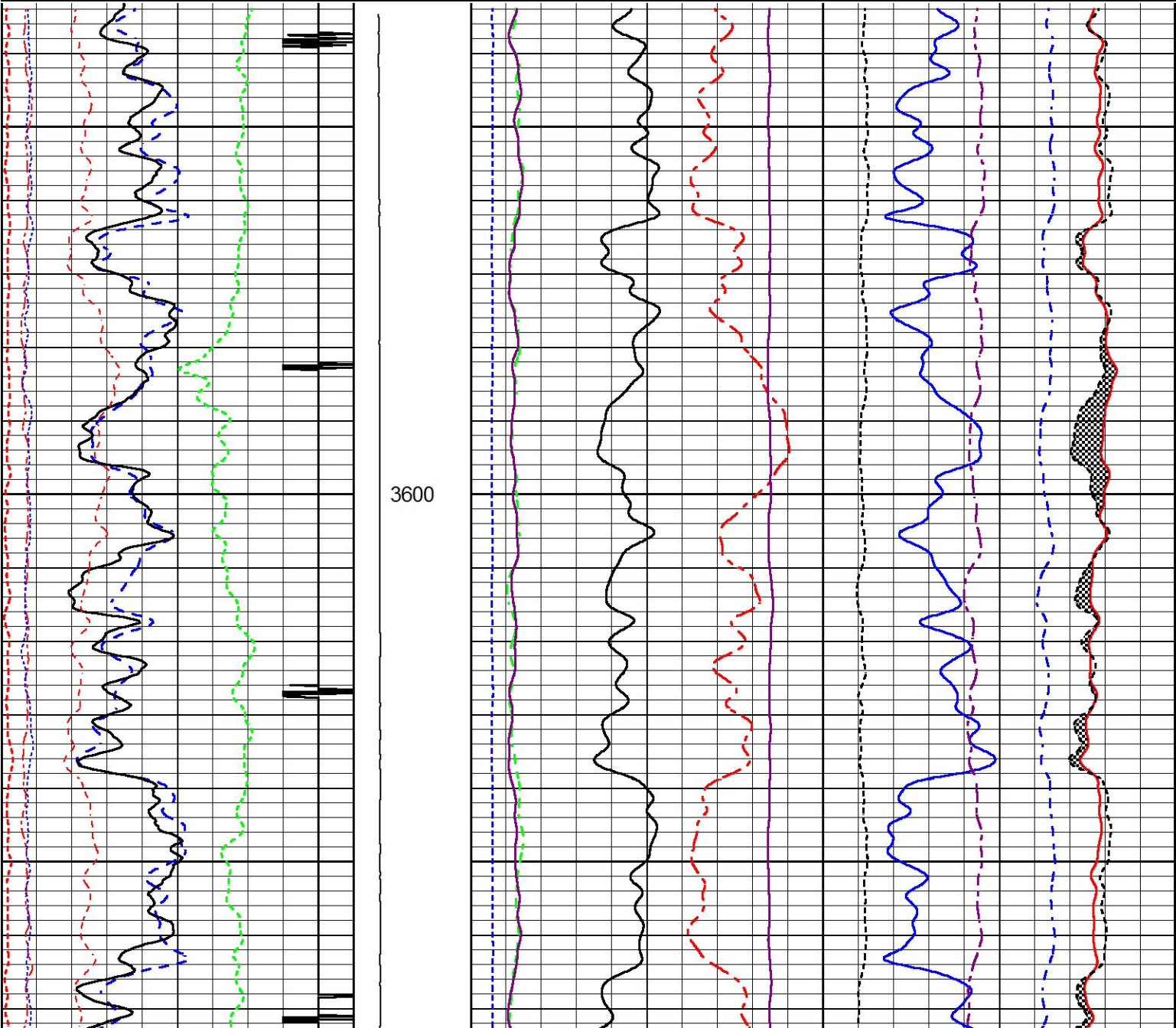
REPEAT LOG SECTION

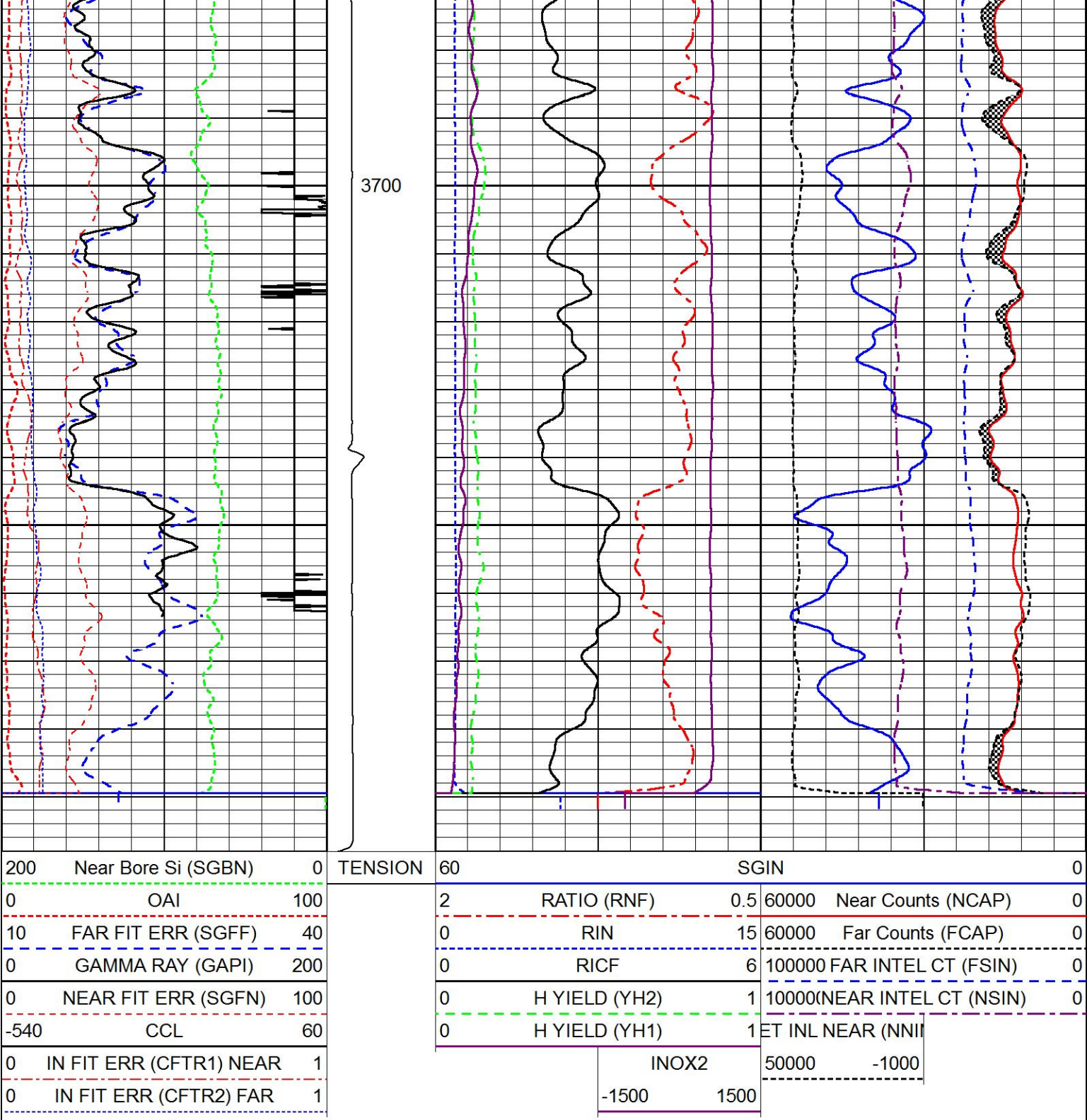
HALLIBURTON

5" = 100'

Database File bat_24c_cmb.db
Dataset Pathname RMTRPT1
Presentation Format RMTE_M~1
Dataset Creation Fri Jun 19 13:55:44 2015
Charted by Depth in Feet scaled 1:240

200	Near Bore Si (SGBN)	0	TENSION	60	SGIN	0
0	OAI	100		2	RATIO (RNF)	0.5 60000 Near Counts (NCAP)
10	FAR FIT ERR (SGFF)	40		0	RIN	15 60000 Far Counts (FCAP)
0	GAMMA RAY (GAPI)	200		0	RICF	6 100000 FAR INTEL CT (FSIN)
0	NEAR FIT ERR (SGFN)	100		0	H YIELD (YH2)	1 10000(NEAR INTEL CT (NSIN)
-540	CCL	60		0	H YIELD (YH1)	1 ET INL NEAR (NNII
0	IN FIT ERR (CFTR1) NEAR	1			INOX2	50000 -1000
0	IN FIT ERR (CFTR2) FAR	1			-1500 1500	





REPEAT LOG SECTION

HALLIBURTON

5" = 100'

Log Variables

DatabaseD:\Warrior_data\bat_24c_cmb.db
Dataset field/well/run1/MAIN1/_vars_

Top - Bottom

BHTEMP_Src	BHSAL2	BHSAL1	POROS2	POROS1	LTH	UHSGC	RHOFCF
TEMP	0	1	0	1	Sandstone	NONE	0.25
SO in 0	BORSAL kppm 150	CASED? Yes	MSGGN 1	USERFTT usec/ft 0	ZREF MRayl 1.7	CASEWGHT lb/ft 11.6	SRFTEMP degF 0
MudWgt lb/gal 804	CASETHCK in 0.25	CASEOD in 4.5	PERFS 0	TDEPTH ft 0	BOTTEMP degF 100	BITSIZE in 7.875	

Serial-Model:12095949-A

Shop Calibration Performed:Wed May 27 10:12:02 2015

Carbon/Oxygen Mode					
Stabilization					
Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	82.00	80.00	2.00	+/-15.00	V
ITCR2	3281	3250	31	+/-250	cps
Near Detector					
	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0270	5.32	<6.00
Fe	207	206 +/-2	0.0961	-----	-----
NGAIN = 0.993NZOFF = 0.7					
Far Detector					
	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0360	5.72	<6.50
Fe	209	208 +/-2	0.0918	-----	-----
FGAIN = 0.991FZOFF = 0.5					
Flask Temperature	63.5 degF				
Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.45	0.45	-0.00	+/-0.02	
LIRI2	1.65	1.64	0.01	+/-0.05	
TCCR2	5061	5000	61	+/-1000	cps
ITCR2	3240	3200	40	+/-250	cps

Sigma Mode					
Stabilization					
Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	82.00	80.00	2.00	+/-15.00	V
FCAP	10080	10000	80	+/-500	cps
Horizontal Water Tank					
Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.91	0.95	-0.04		
N/F Inel Norm	0.58	0.61	-0.03		
RNF	1.10	1.07	0.03	+/-0.12	
RINC	1.71	1.64	0.07	+/-0.18	
SGFN	24.09	24.00	0.09	+/-0.50	cu
SGFF	22.90	22.85	0.05	+/-0.50	cu
FSIN	24192	24000	192	+/-2000	cps
FCAP	10177	10000	177	+/-1000	cps
NFTR	0.84			<5.00	
FFTR	0.88			<5.00	
NBKG	179			<500	cps
FBKG	93			<500	cps
RTN	0.40	0.40	0.00	+/-0.10	usec
RTF	0.43	0.40	0.03	+/-0.10	usec


Calibration Software Modules	
HRMTI Module	2013.11.14.0
RMTI Module	2014.8.28.1
Log Data Acquisition Software Modules	
HRMTI Module	2013.11.14.0
RMTI Module	2014.8.28.1

Cement Bond Log Shop Calibration Report	
Serial-Model:	11817843-A
Calibration Performed:	Wed Jun 17 01:49:39 2015

Free Pipe Calibration		
TT	Measured	Units
Amplitude	246.9	usec
Log Base Line	574.2	mV
	-7.6	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	0.140	

Gamma Ray Calibration Report	
Type / Serial:	002 / 11495480

SHOP CALIBRATION		Fri Jun 19 09:22:14 2015			
	Counts/Sec.	Gain	Offset	Jig	Units
Background	38.3				cps
Calibrator	331.7				cps
		1.3904			GAPI/cps
PRIMARY VERIFICATION		Fri Jun 19 09:24:24 2015			
Background	51.8				cps
Calibrator	462.0				cps
Difference				410.2	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	35.09		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
			TTTCU-002 (11495480)	7.65	1.69	100.00

GR	32.83		Through Tubing Telemetry Cartridge - Ultrawire					
			XHU-003 (12461939) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00		
			CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00		
Temp	23.11							
TT3FT	20.86		HCBLM-A (11817843) Halliburton HCBLM Tool	9.38	2.75	116.00		
AMP3FT	20.86							
			CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00		
RmtTFGT	8.47							
RmtTNGT	7.97		RMTI-A (12095949) Halliburton RMTI Tool	14.00	2.13	77.00		
RmtFP5V	0.22		BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20		
RmtCommFWar	0.22							
LOCTIM	0.00							
UTCTIM	0.00							
LLMTEN	0.00							
Dataset:			bat_24c_cmb.db: field/well/run1/MAIN1					
Total length:			38.66 ft					
Total weight:			352.20 lb					
O.D.:			3.13 in					

Company	URSA OPERATING CO., LLC.				
Well	BAT 24C-18-07-95				
Field	PARACHUTE				
County	GARFIELD		State	CO	
HALLIBURTON	RESERVOIR MONITOR TOOL - ELITE				

	FOOL-ELITE
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