

HALLIBURTON

CEMENT BOND LOG

FIELD COPY

Company URSA OPERATING CO., LLC.
 Well TOMPKINS 41A-08-07-95
 Field PARACHUTE
 County GARFIELD State CO

Company URSA OPERATING CO., LLC.
 Well TOMPKINS 41A-08-07-95
 Field PARACHUTE
 County GARFIELD State CO

API No.: 05 045 22480 0000 Serv. #: 903426614
 Location: LAT: 39.460026 LONG: -108.014002
 SHL: 223 FSL, 596 FEL
 BHL: 110 FNL, 660 FEL

Sec: 11 Twp: 6S Rge: 92W
 Elevation 5532
 Other Services

Permanent Datum GL
 Log Measured From KB
 Drilling Measured From KB

Date @ Time Logged 17-JUL-16 @1000
 Run No. ONE
 Depth - Driller 7010
 Depth - Logger 6810
 Bottom - Logged Interval 6810
 Top - Log Interval 1703
 Max. Recorded Temp. 215

Type Fluid in Hole FRESH WATER
 Density of Fluid 8.33
 Fluid Level SURFACE
 Cement Top Est. Logged 1752
 Equipment / Location RS06 / US RK
 Recorded by SULLIVAN
 Witnessed by RICHARD

CEMENTING DATA
 Surface String
 Protection String
 Production String
 Liner

Date / Time Cemented		Primary / Squeeze		Expected Compressive Strength		Cement Volume		Cement Type / Weight Formulation		Mud Type / Mud Wgt.	
psi@	hrs	psi@	hrs	psi@	hrs	psi@	hrs	psi@	hrs	psi@	hrs
Borehole Record											
Run Number	Bit	From	To	Size	Weight	Casing & Tubing Record					
24				16		From	To				
12.25				8.625		SURFACE	SURFACE				
7.875				4.5		SURFACE	SURFACE				

<<< 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

LOG CORRELATED TO HALLIBURTON SPECTRAL DENSITY DUAL SPACED NEUTRON ARRAY COMPENSATED TRUE RESISTIVITY LOG DATED: 01-JUL-16

LOG INTERVAL PER CUSTOMER REQUEST

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES

Log Variables DatabaseC:\ProgramData\Warrior\Data\ursa_tom_41a.db Dataset field/well/run1/MAIN1/_vars_

Top - Bottom

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

8.33

0.5

4.5

0

0

215

7.875

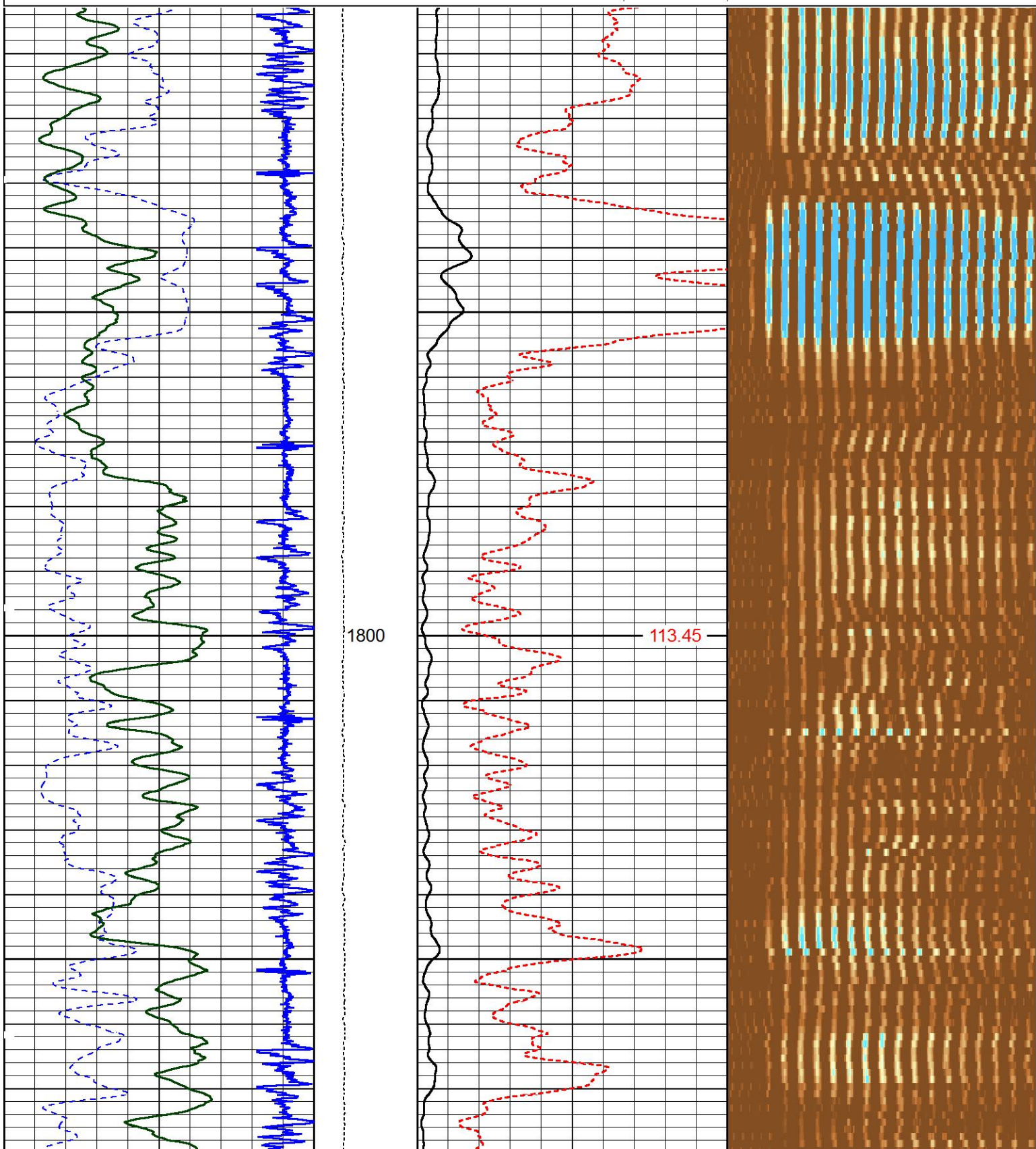
MAIN LOG

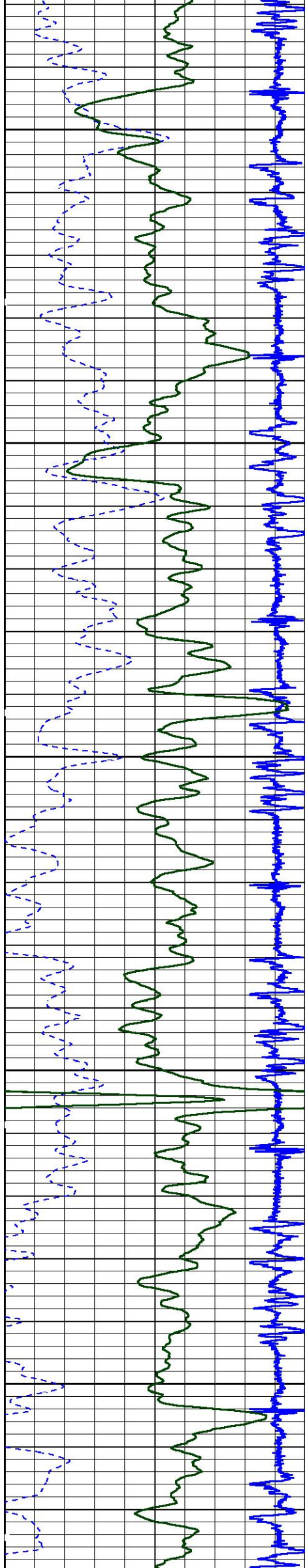
HALLIBURTON

5"=100'

Database File ursa_tom_41a.db
 Dataset Pathname MAIN1
 Presentation Format 1_ss_cblm
 Dataset Creation Sun Jul 17 10:14:12 2016
 Charted by Depth in Feet scaled 1:240

310	3' Travel Time (usec)	210	LTEN	0	3' Amplitude (mV)	100	200	MSG	1060
-1000	CCL	100	0	(lb.1500)	0	3' Amplitude X5 (mV)	10	20	150
0	Gamma Ray (GAPI)	150							
						CblTemp (degF)			





1900

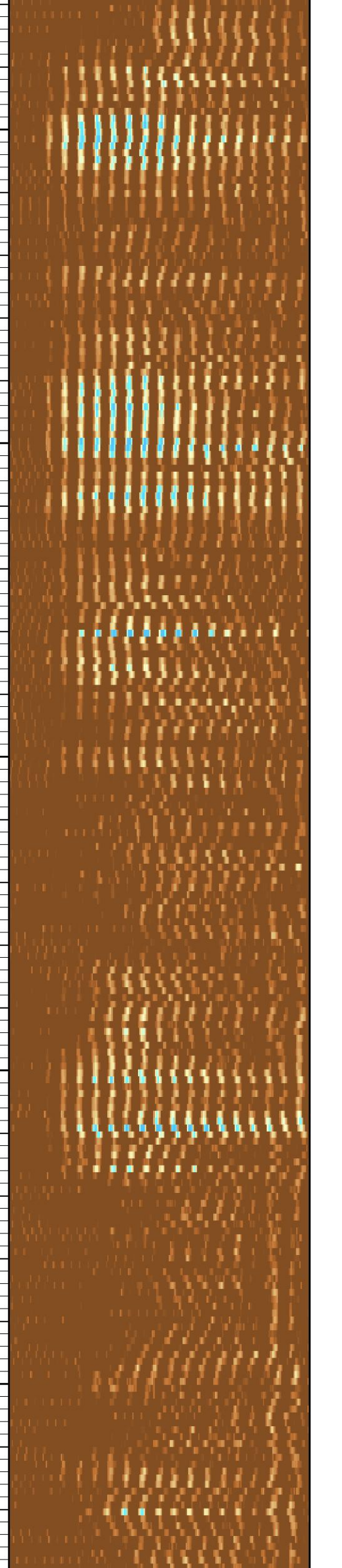
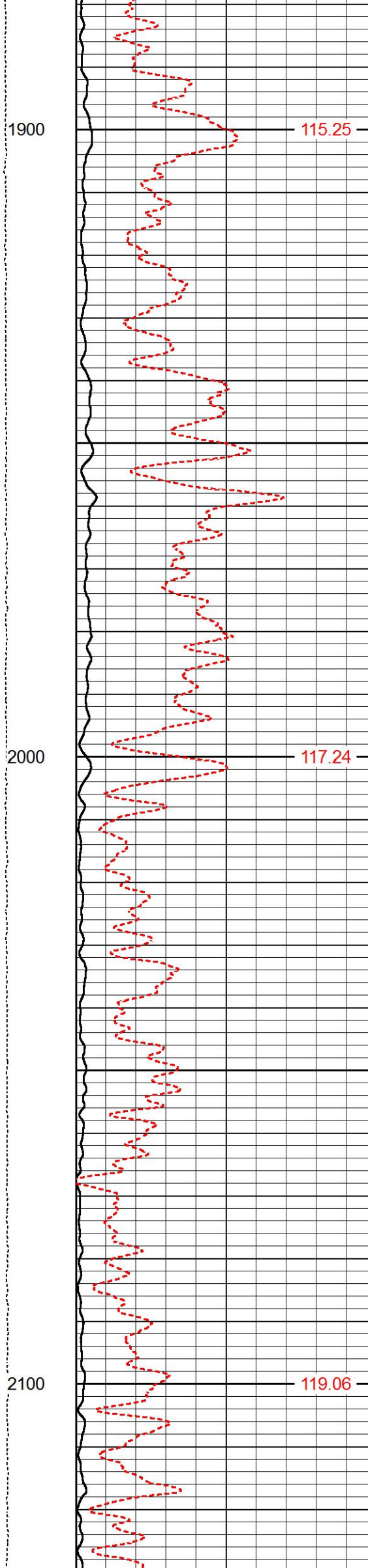
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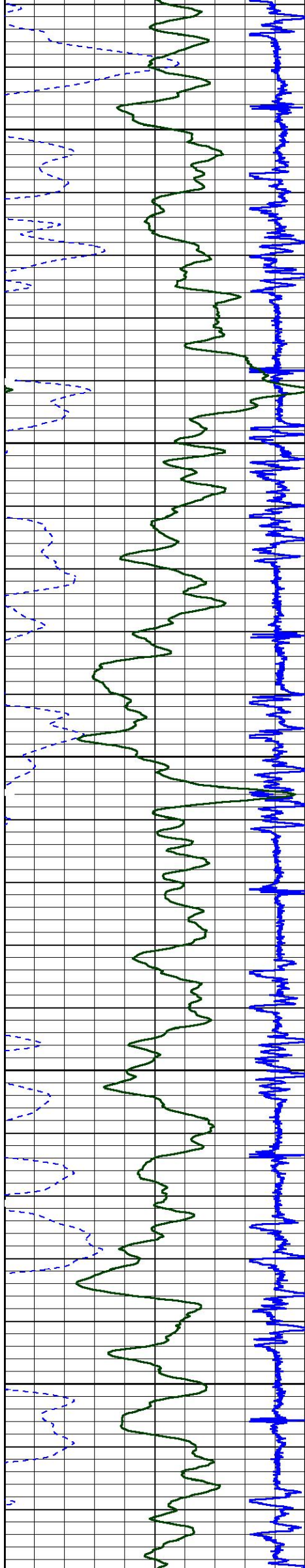
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117.24

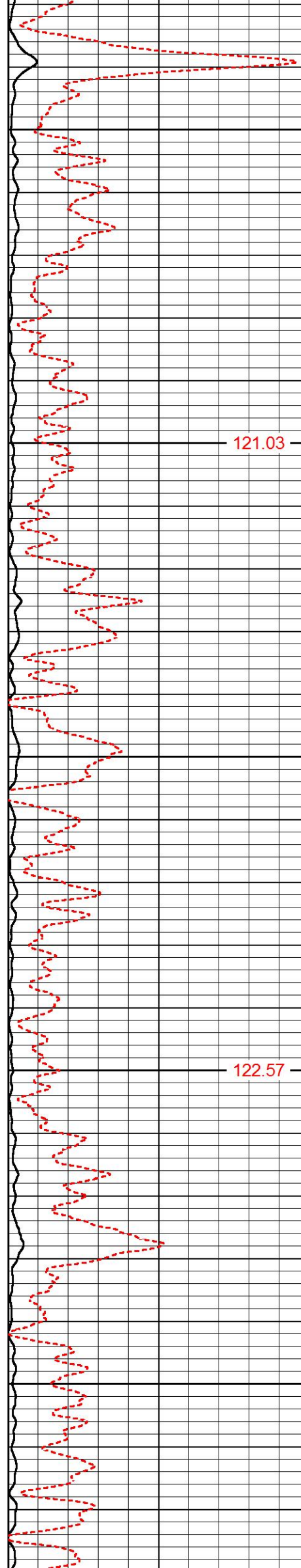
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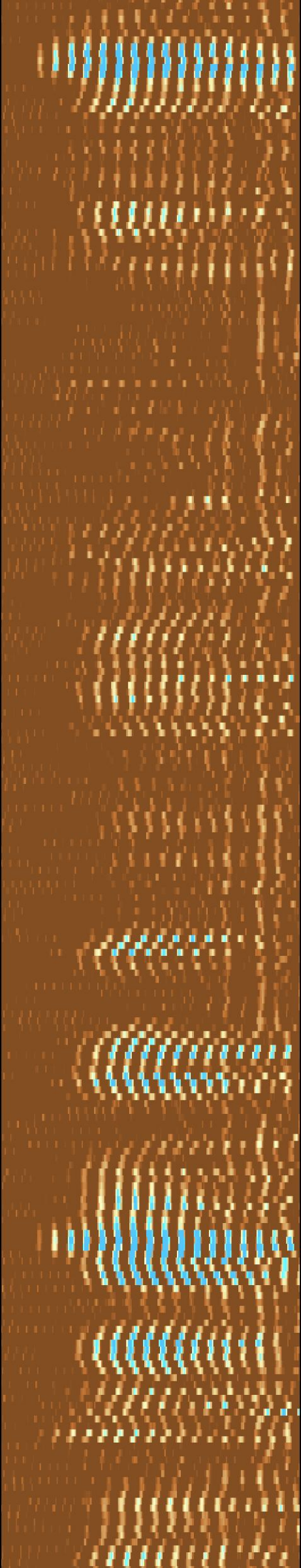
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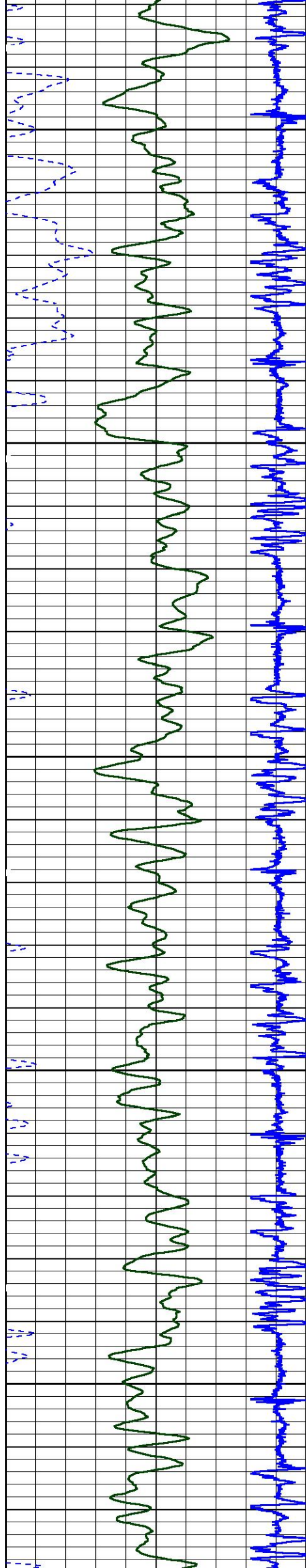
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121.03

122.57





2400

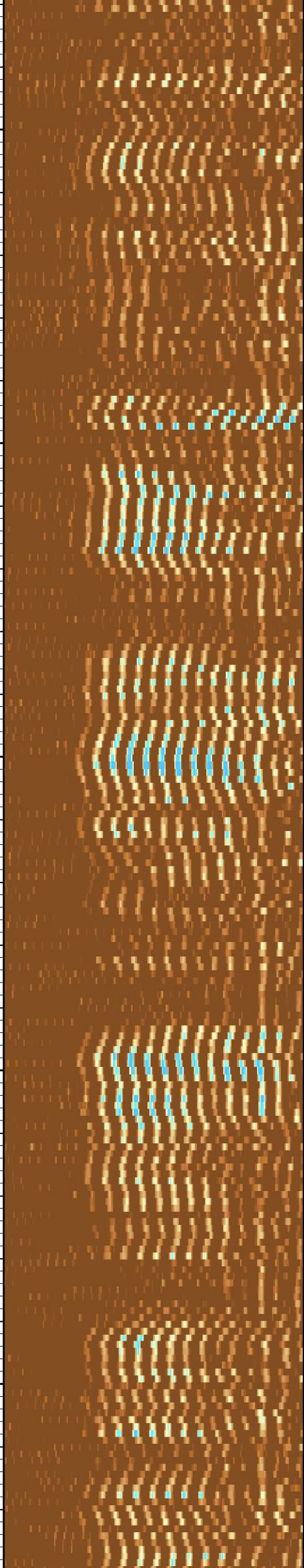
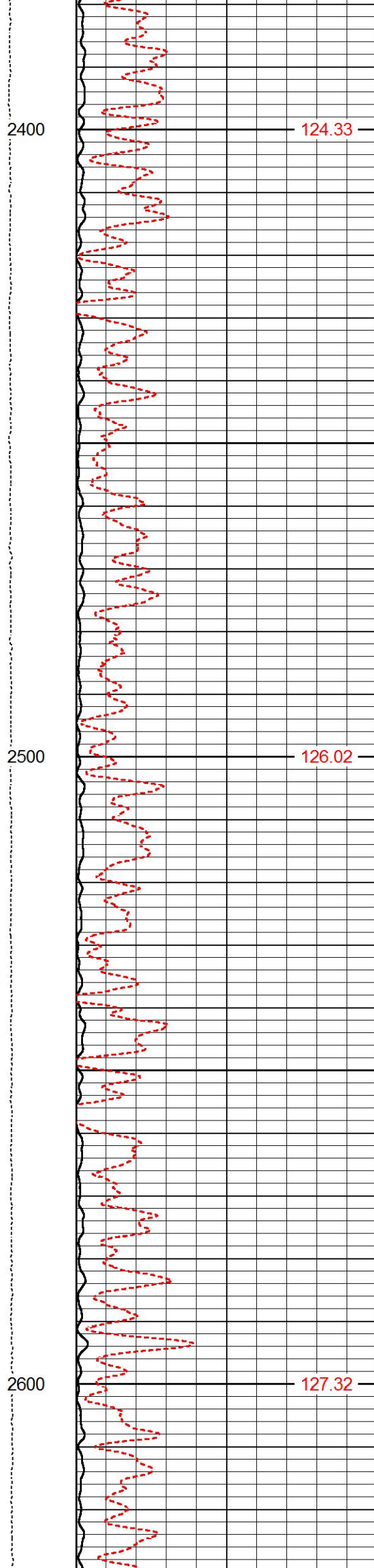
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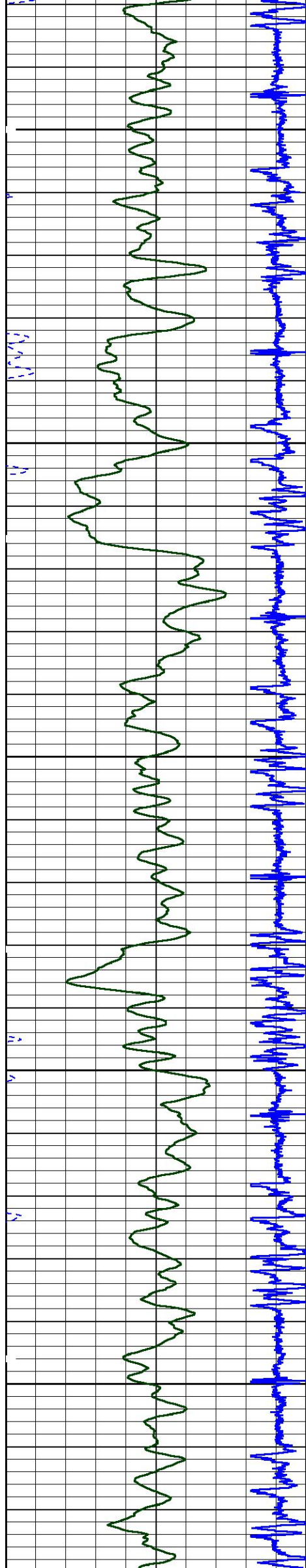
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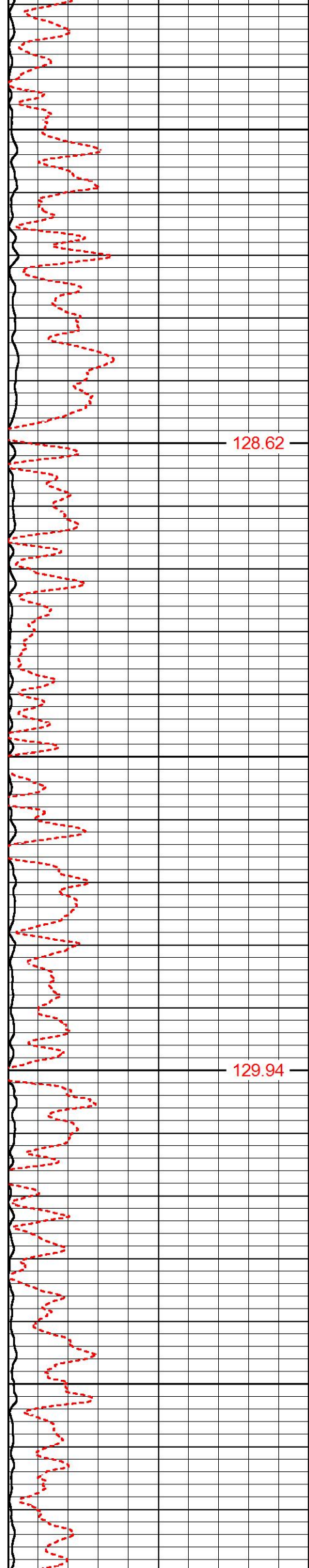
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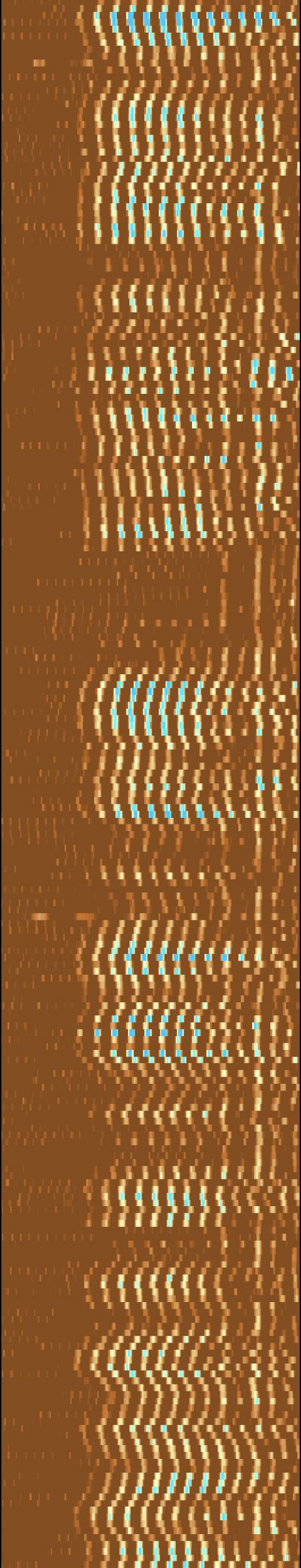
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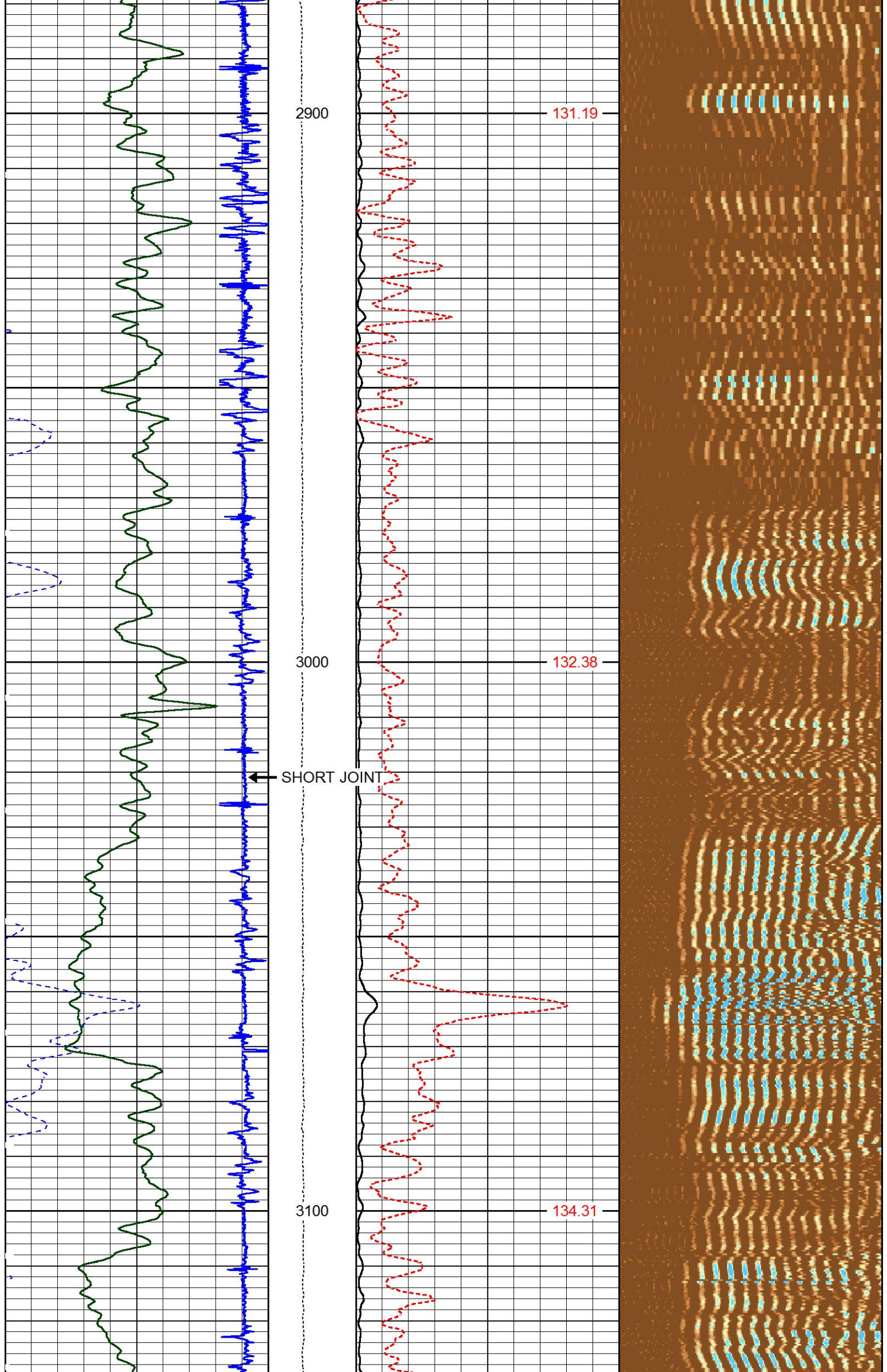
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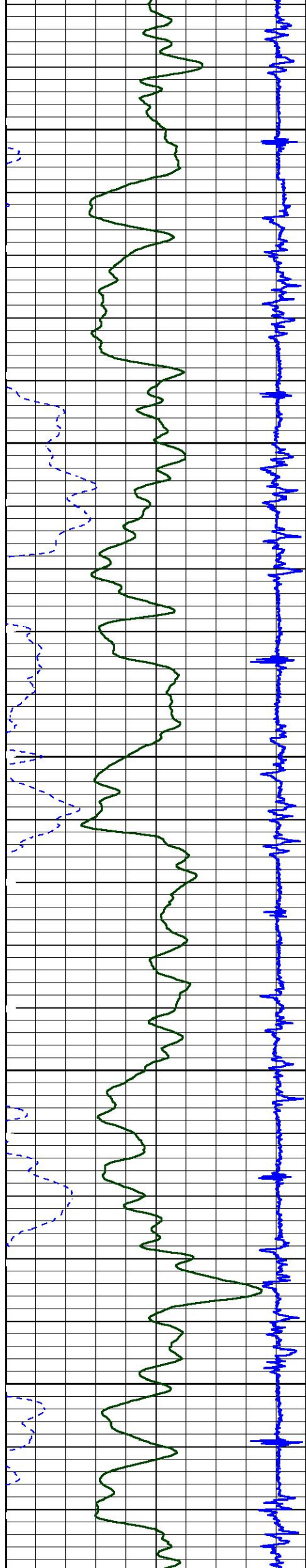


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129.94

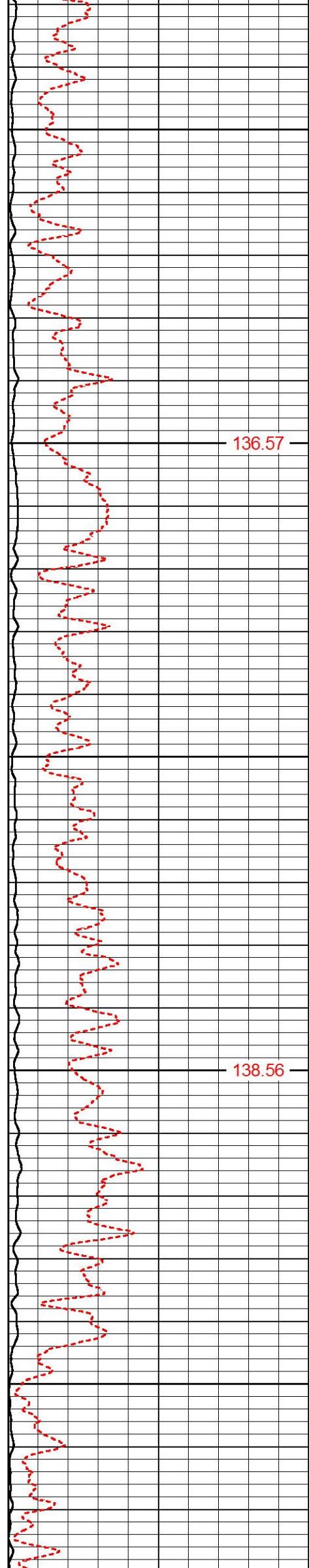






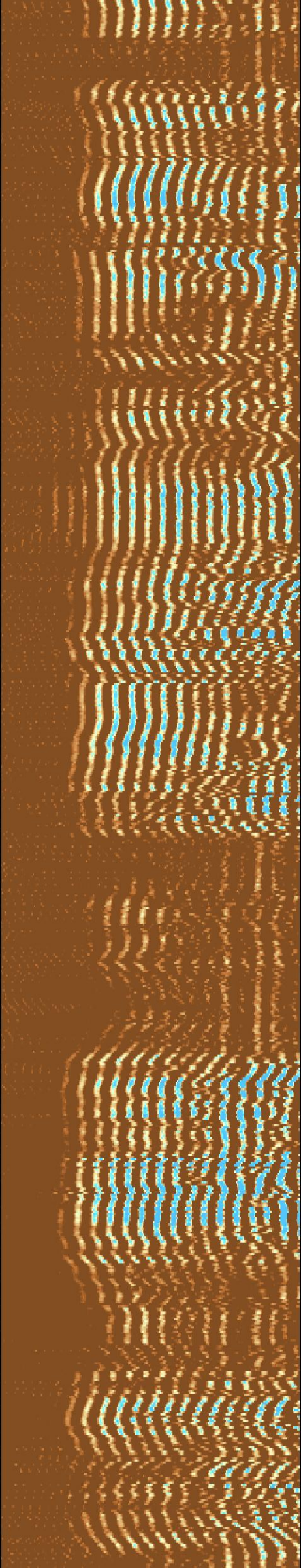
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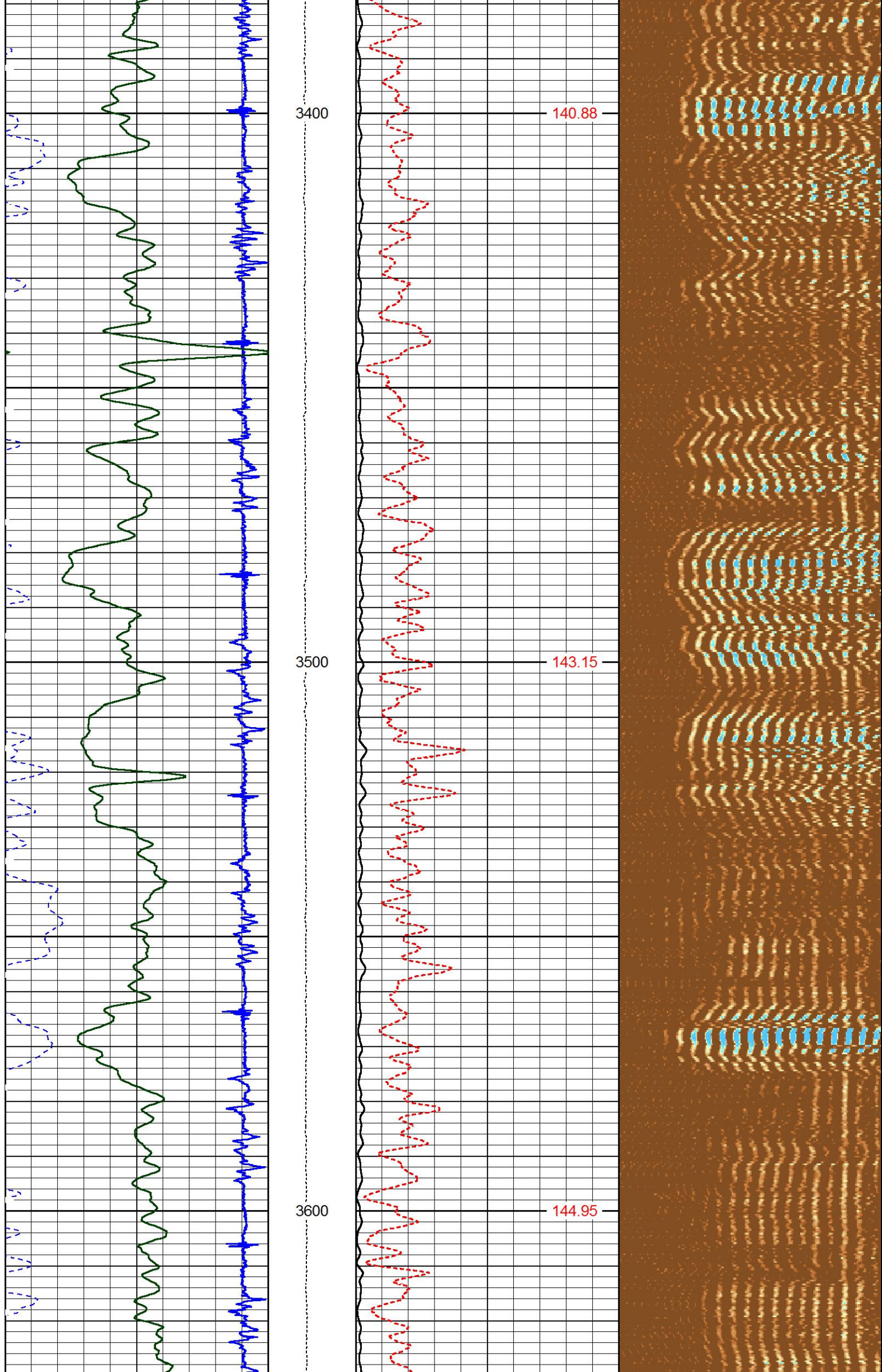
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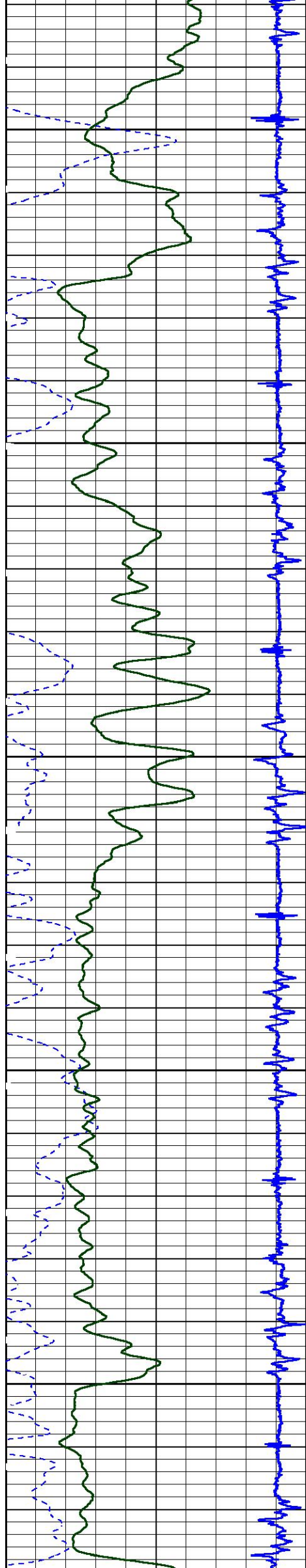


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138.56

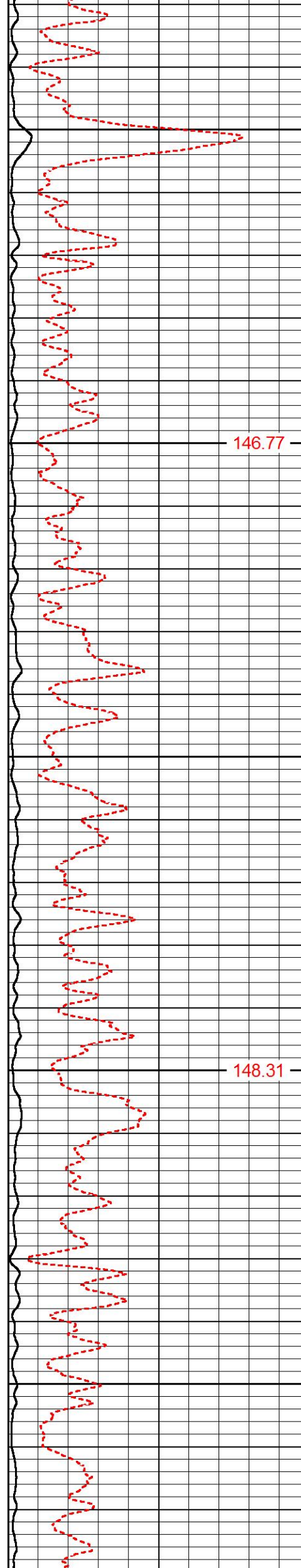






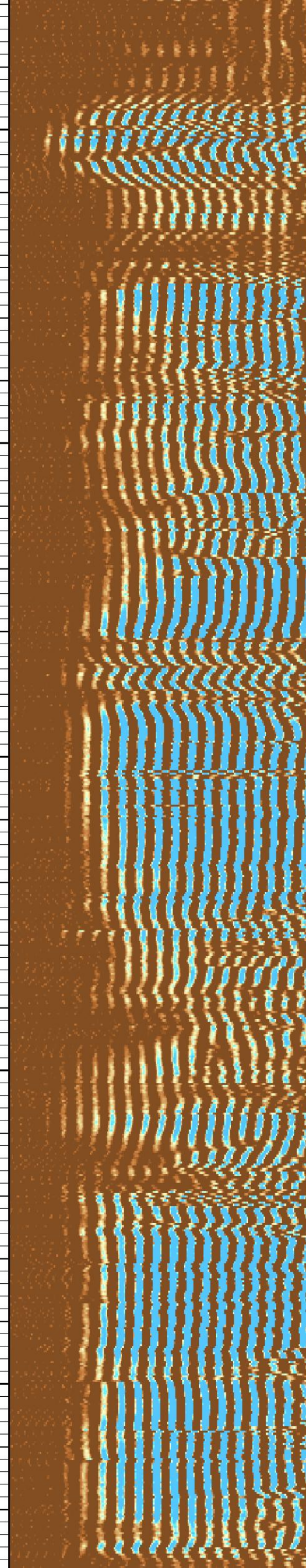
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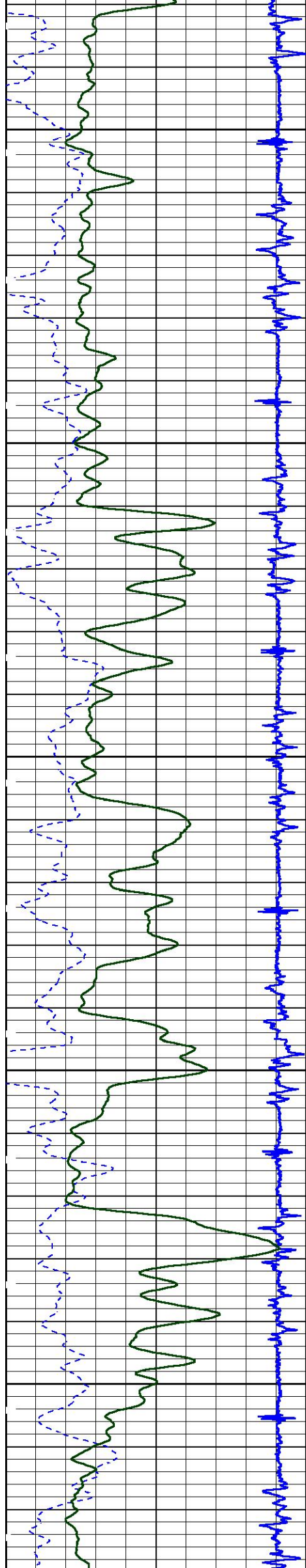
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146.77

148.31





3900

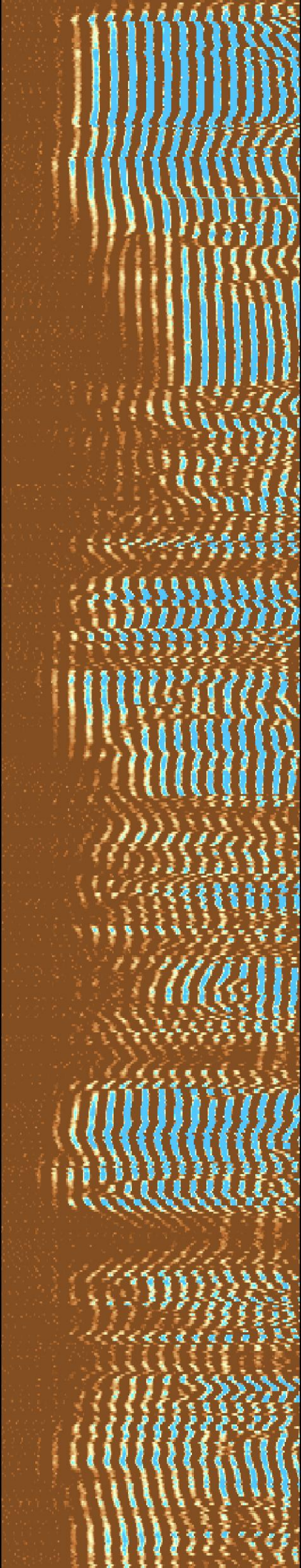
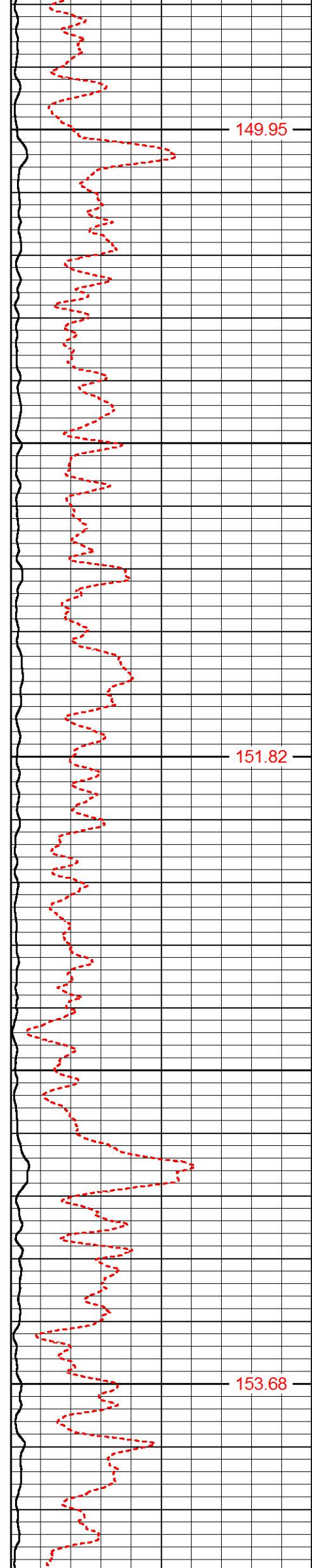
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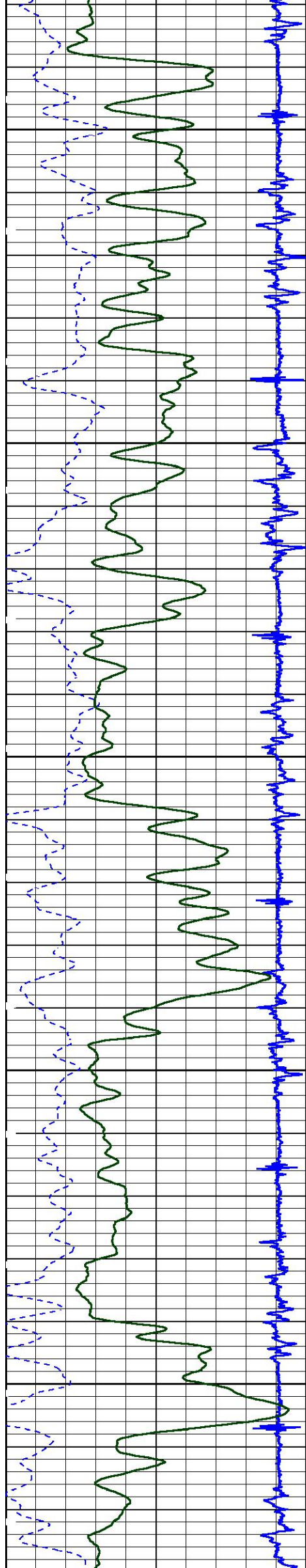
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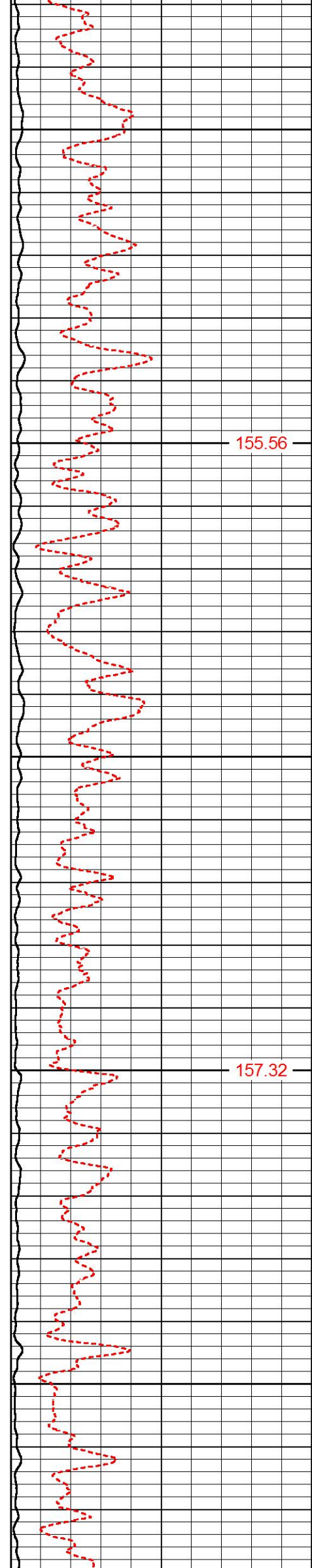
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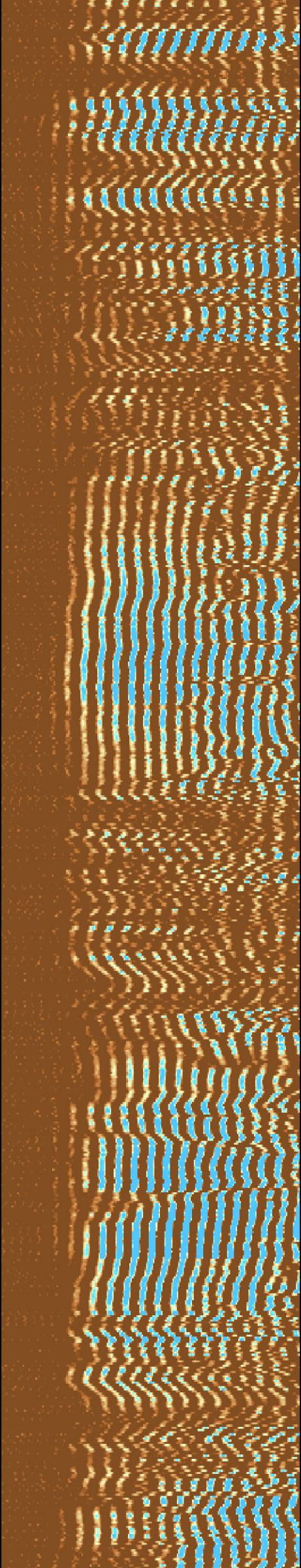
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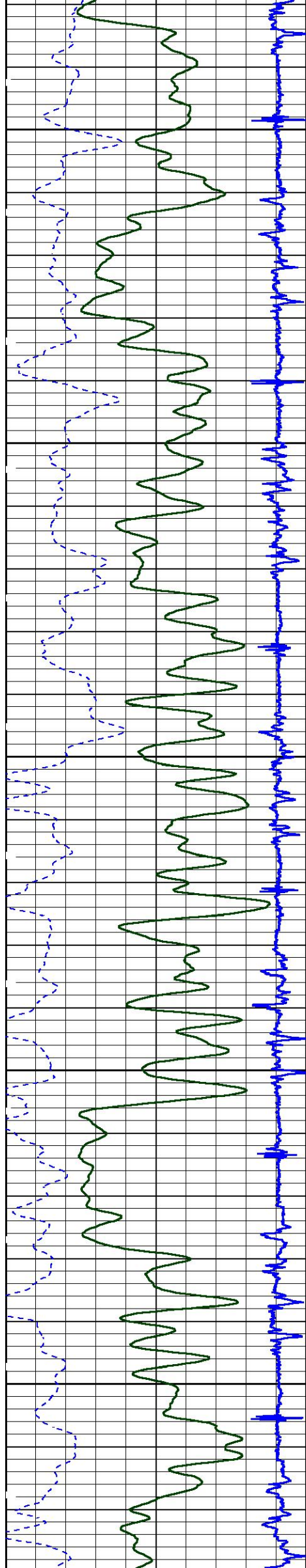
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155.56

157.32





4400

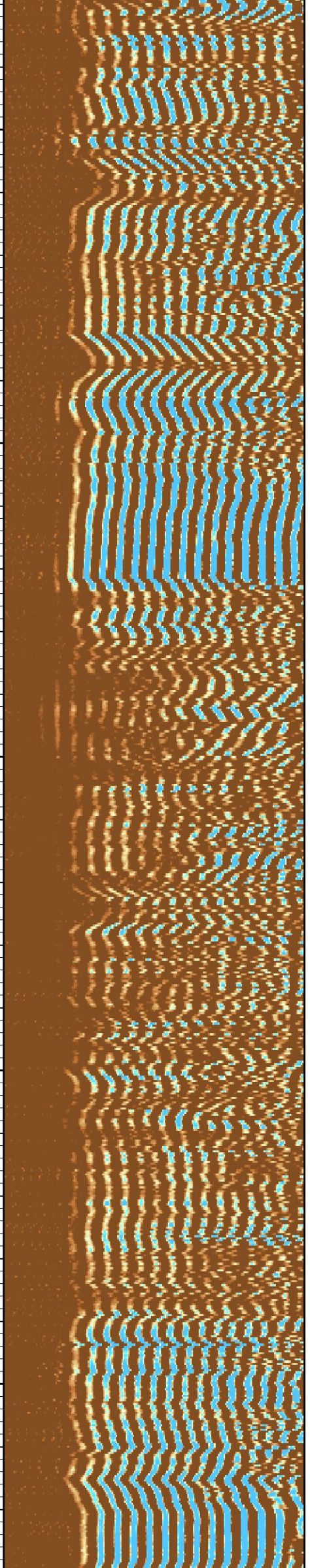
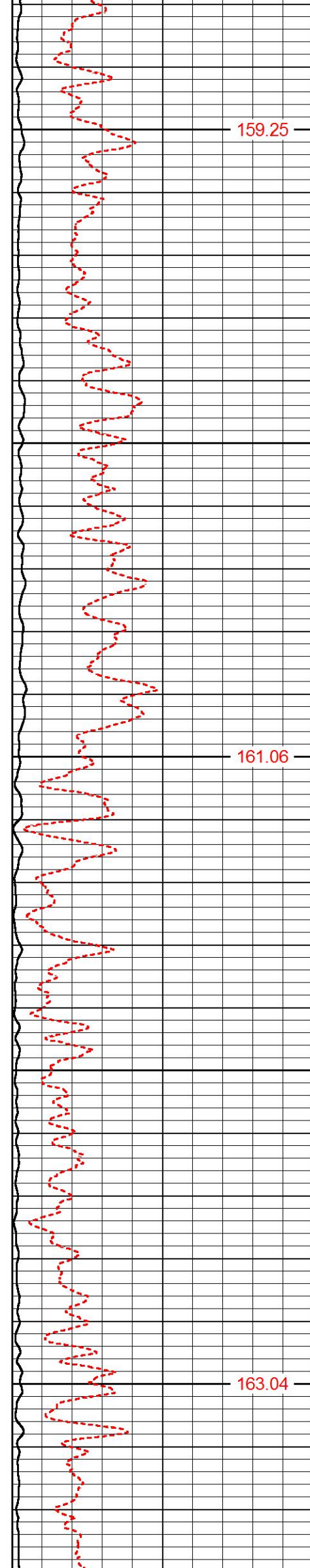
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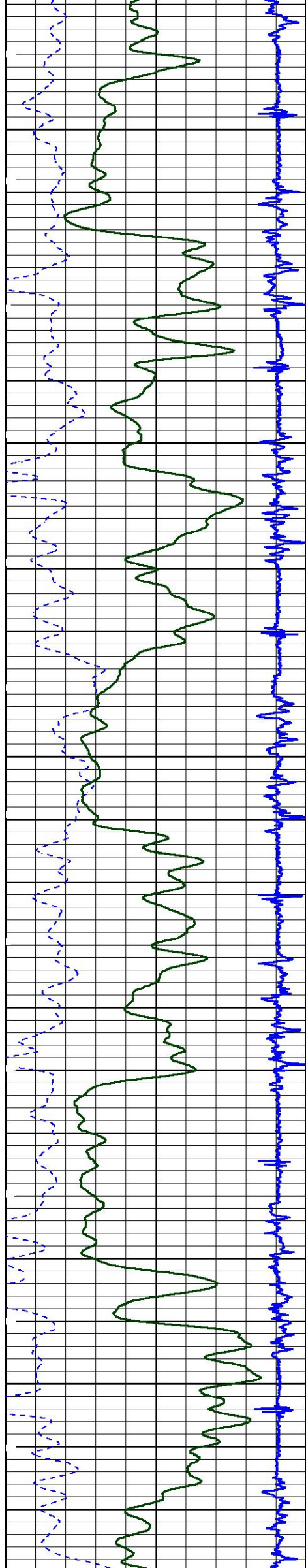
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163.04



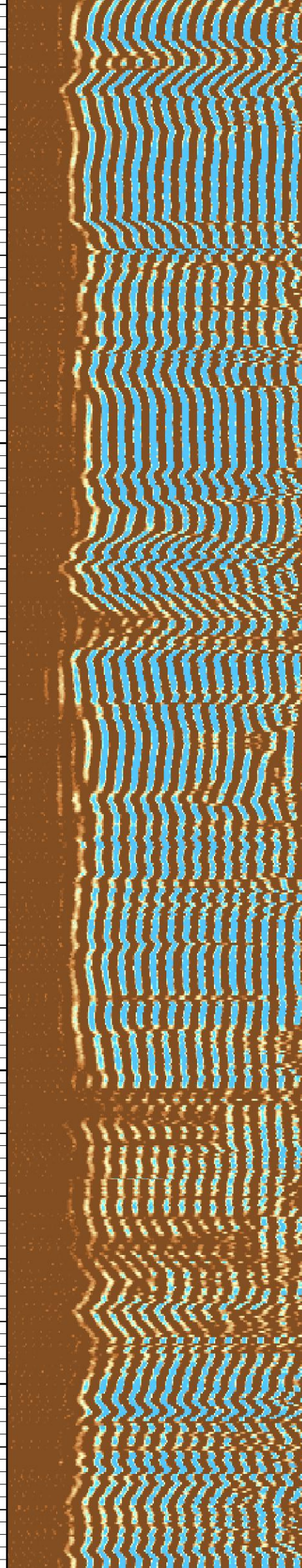
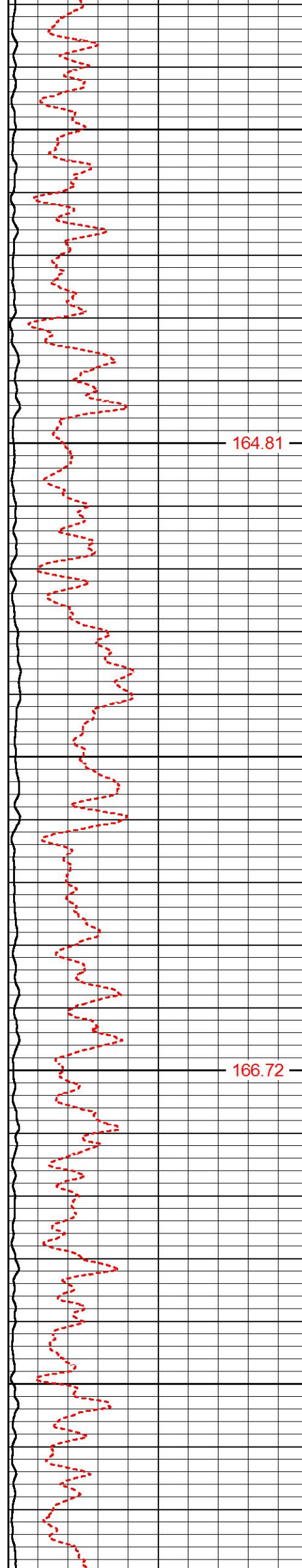


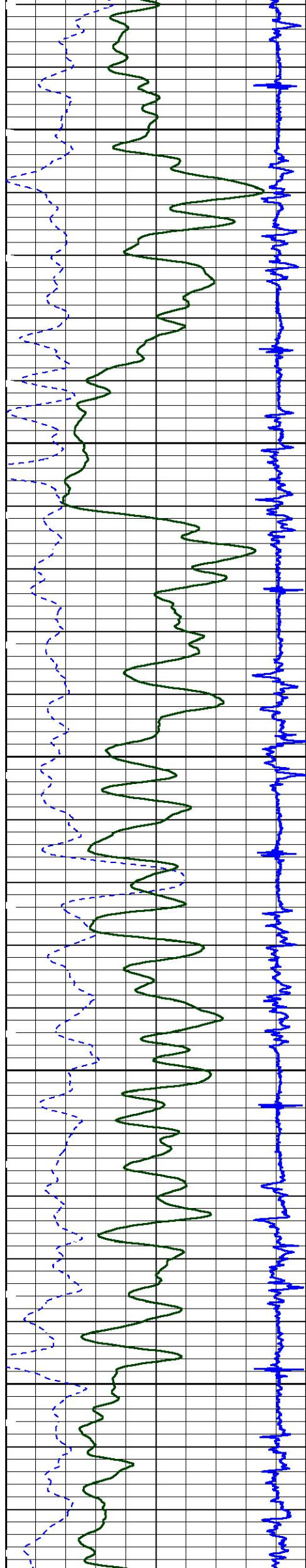
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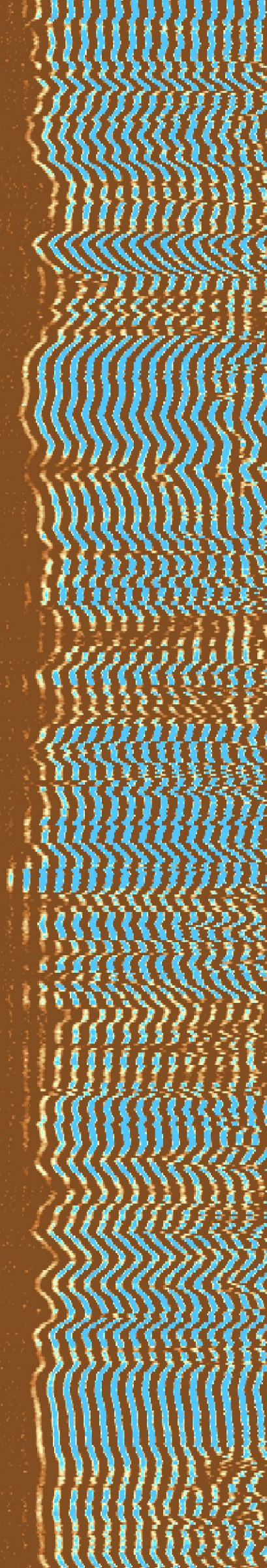
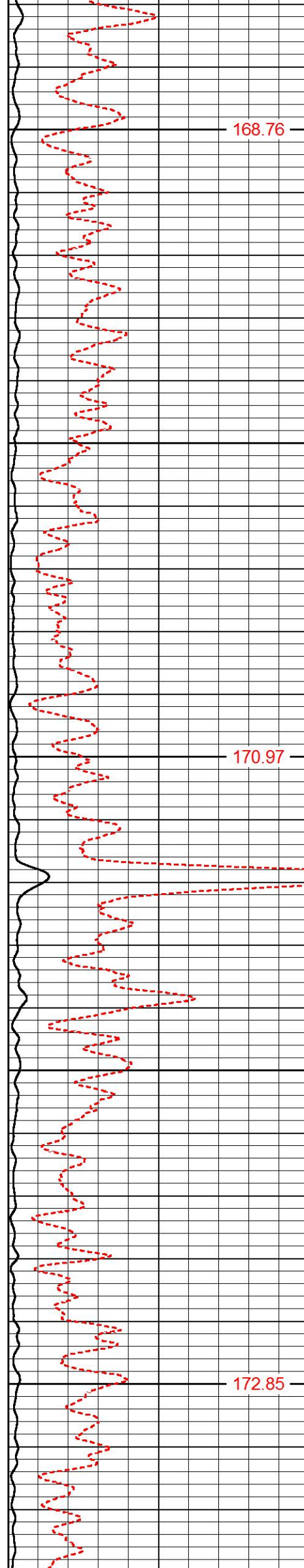
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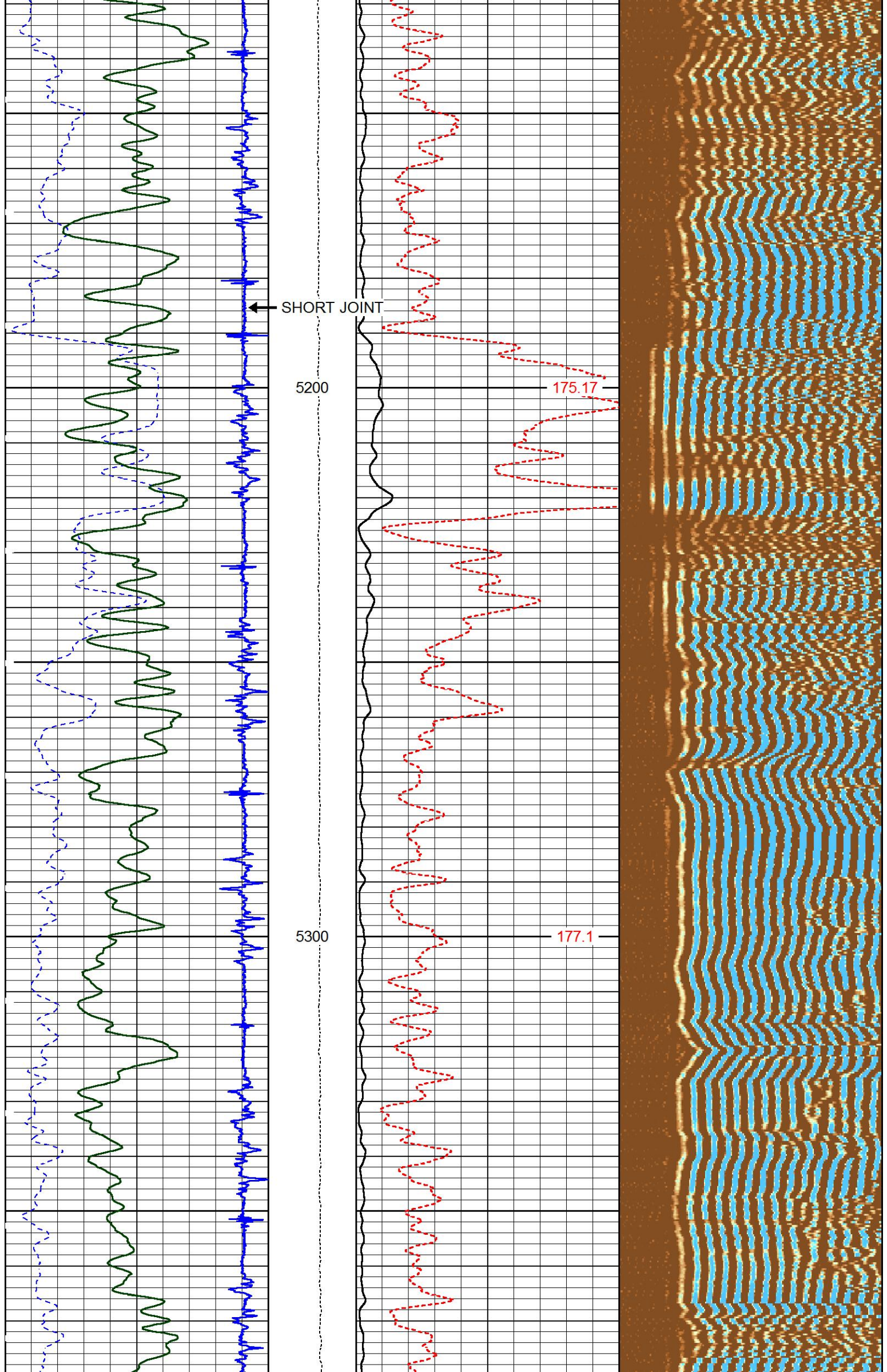
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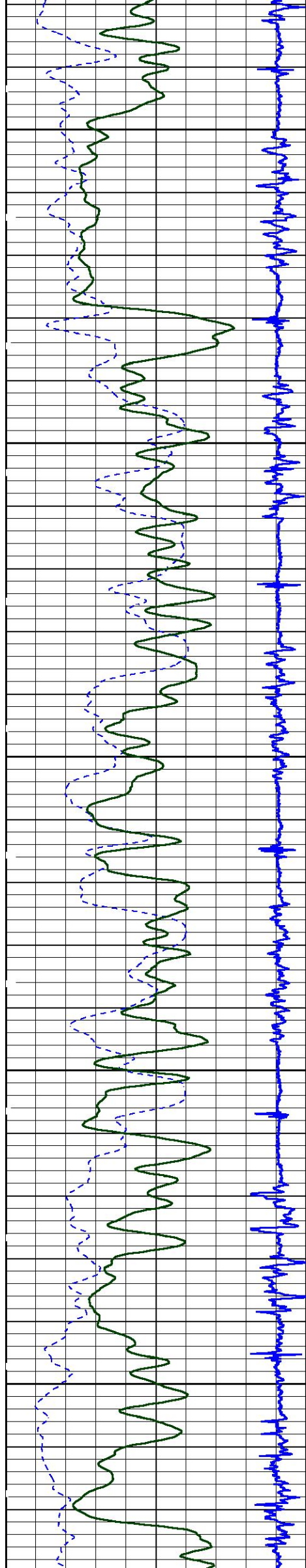
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5100

172.85







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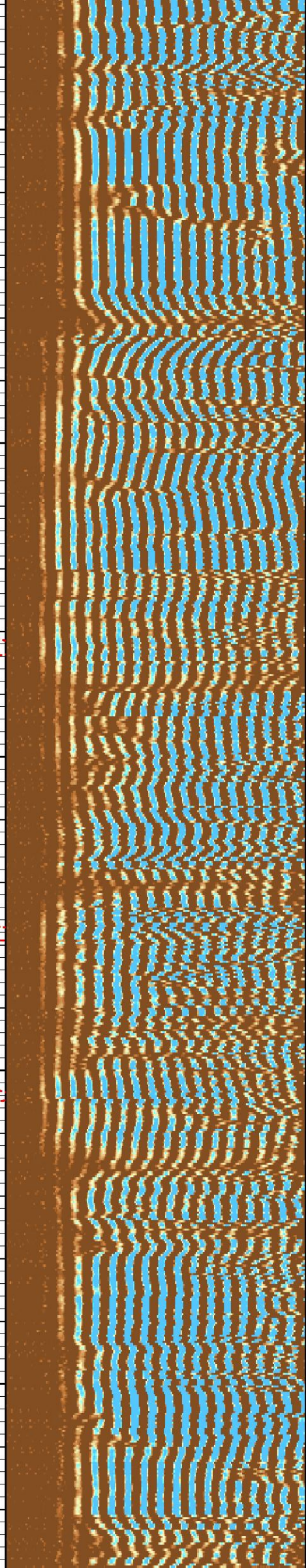
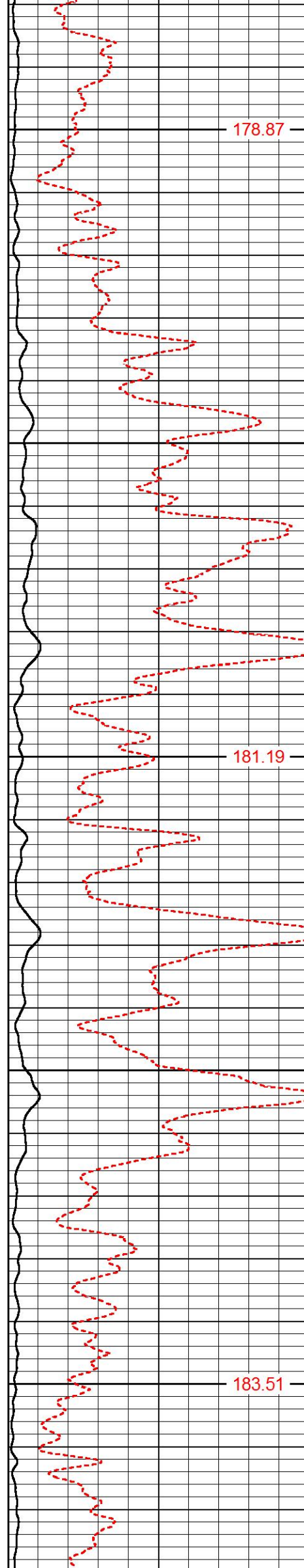
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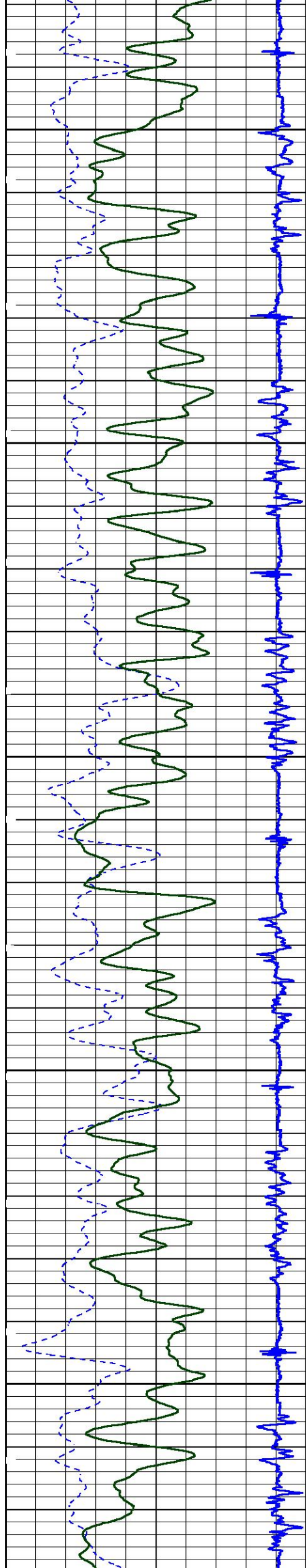
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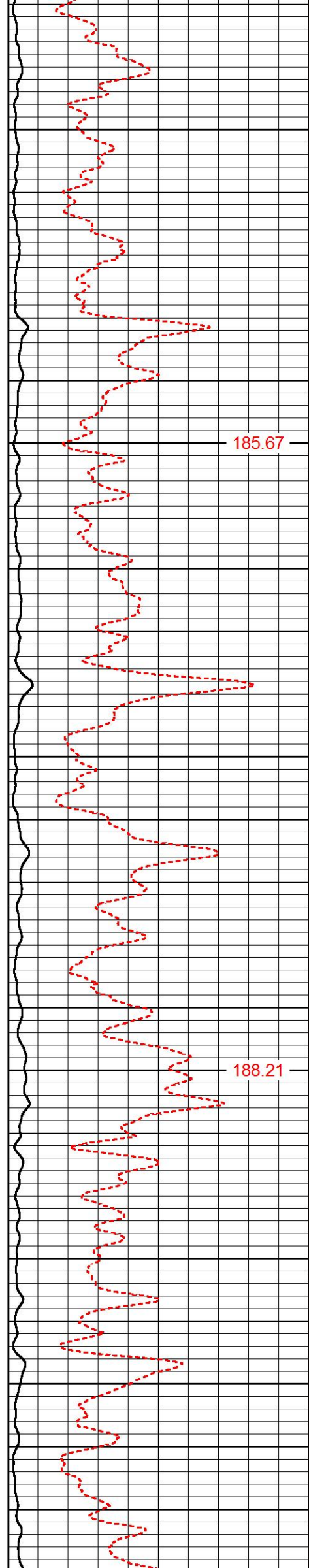
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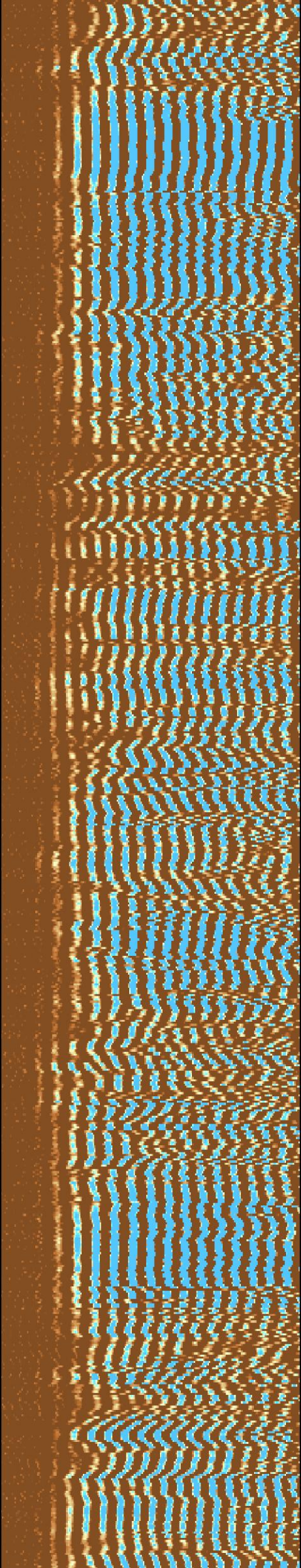
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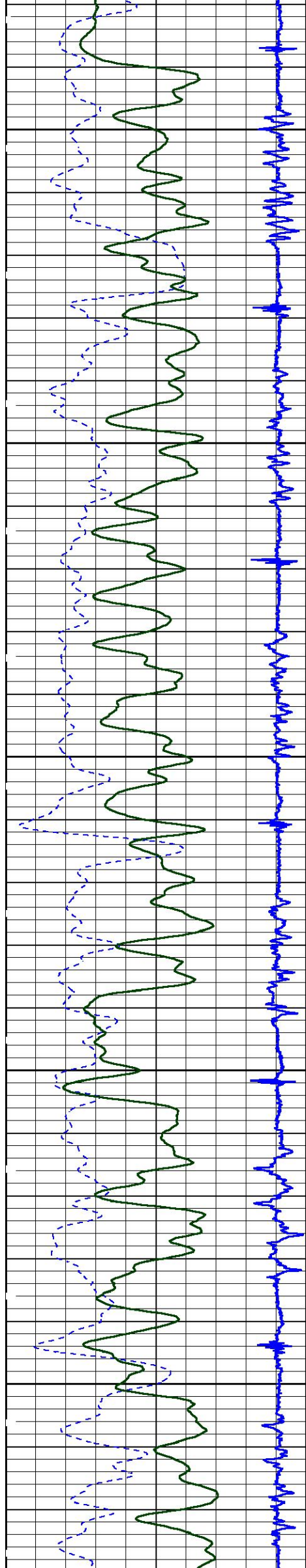
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185.67

188.21





5900

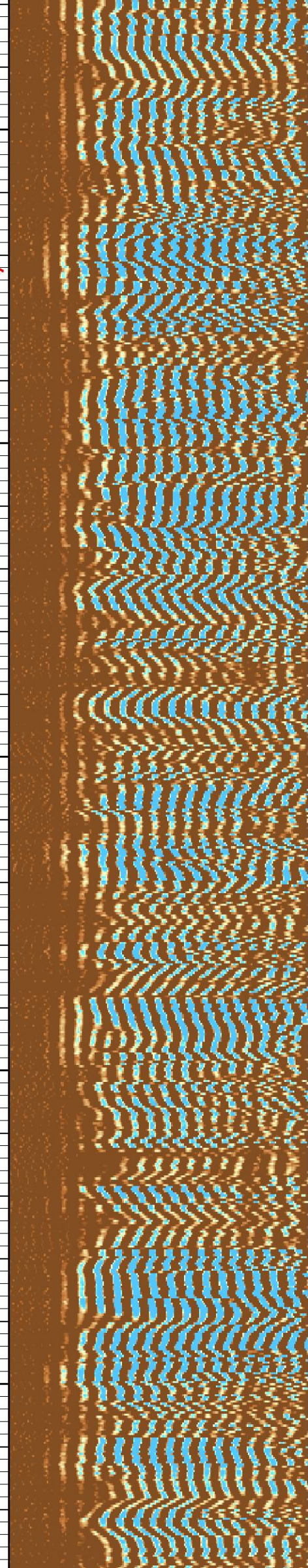
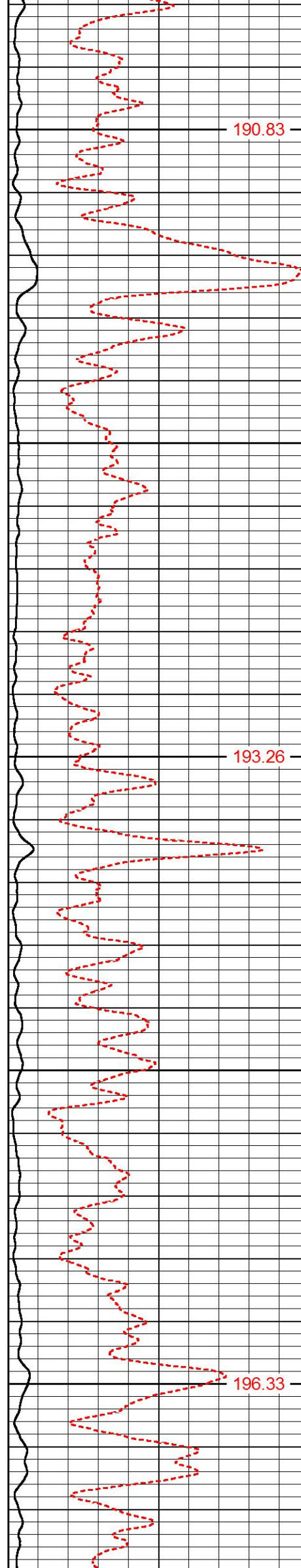
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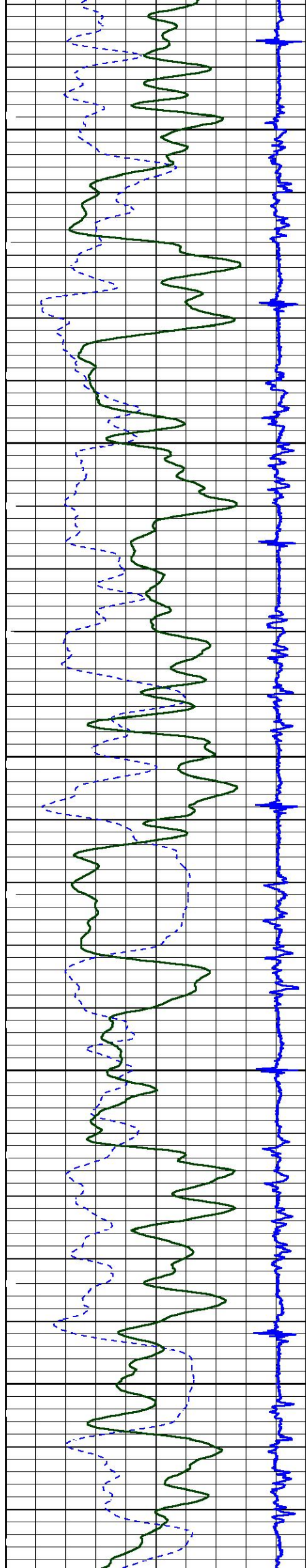
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193.26

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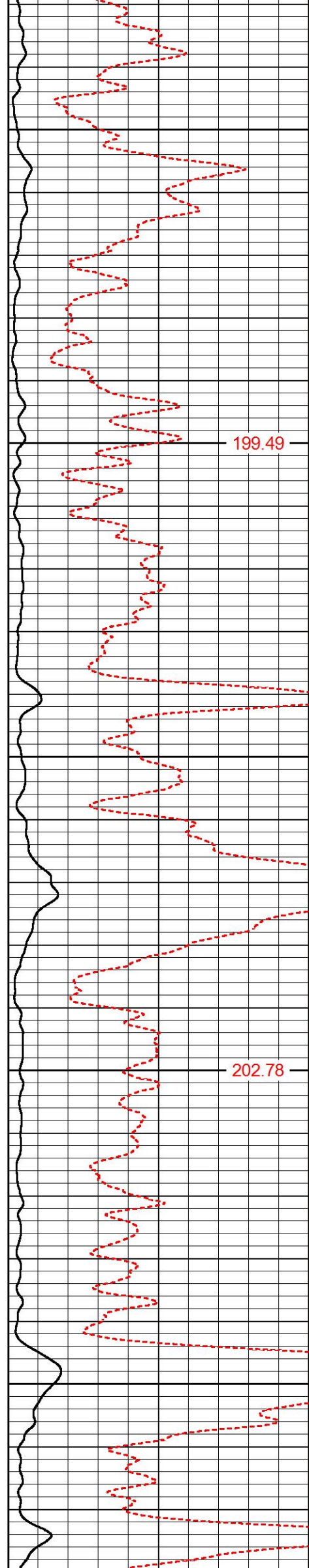
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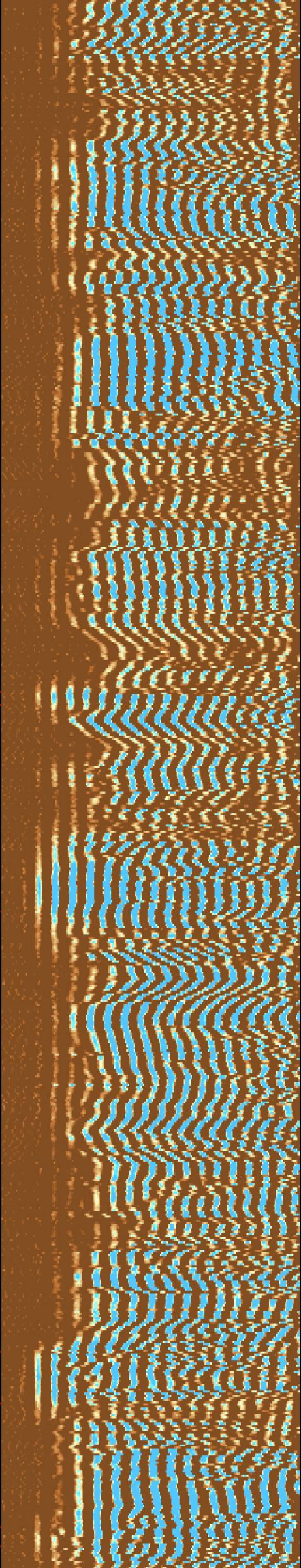
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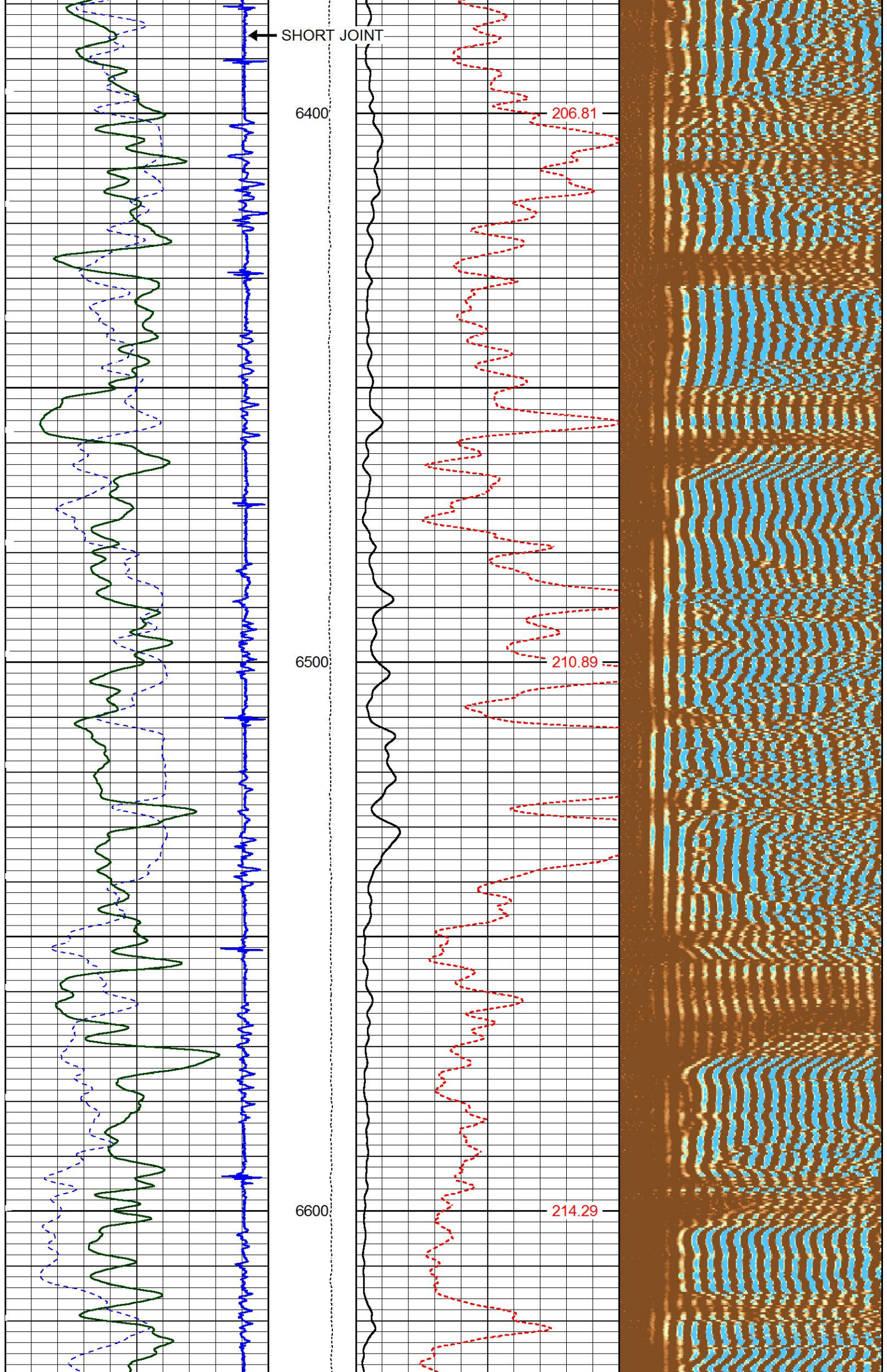
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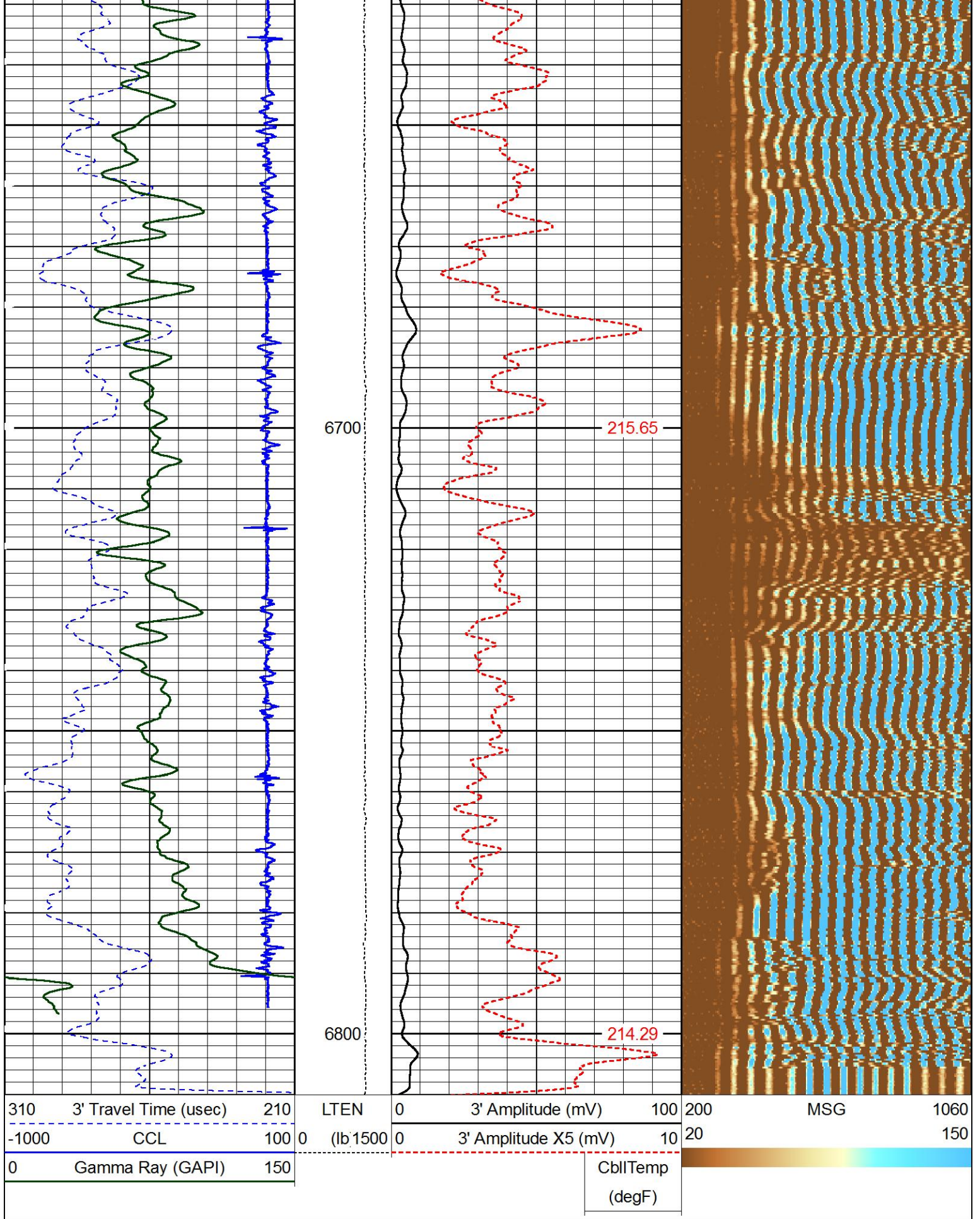


199.49

202.78







MAIN LOG

HALLIBURTON

5"=100'

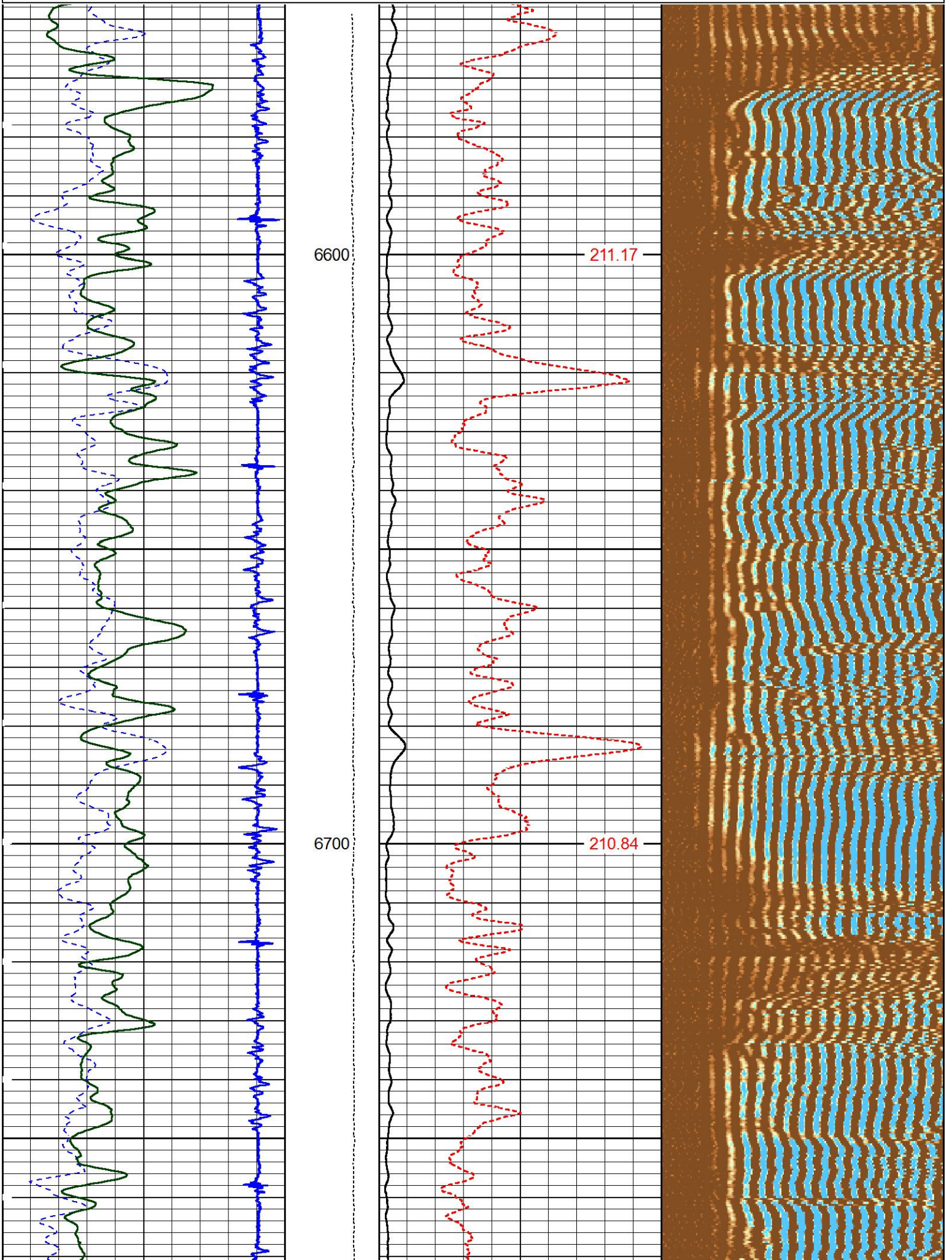
REPEAT PASS

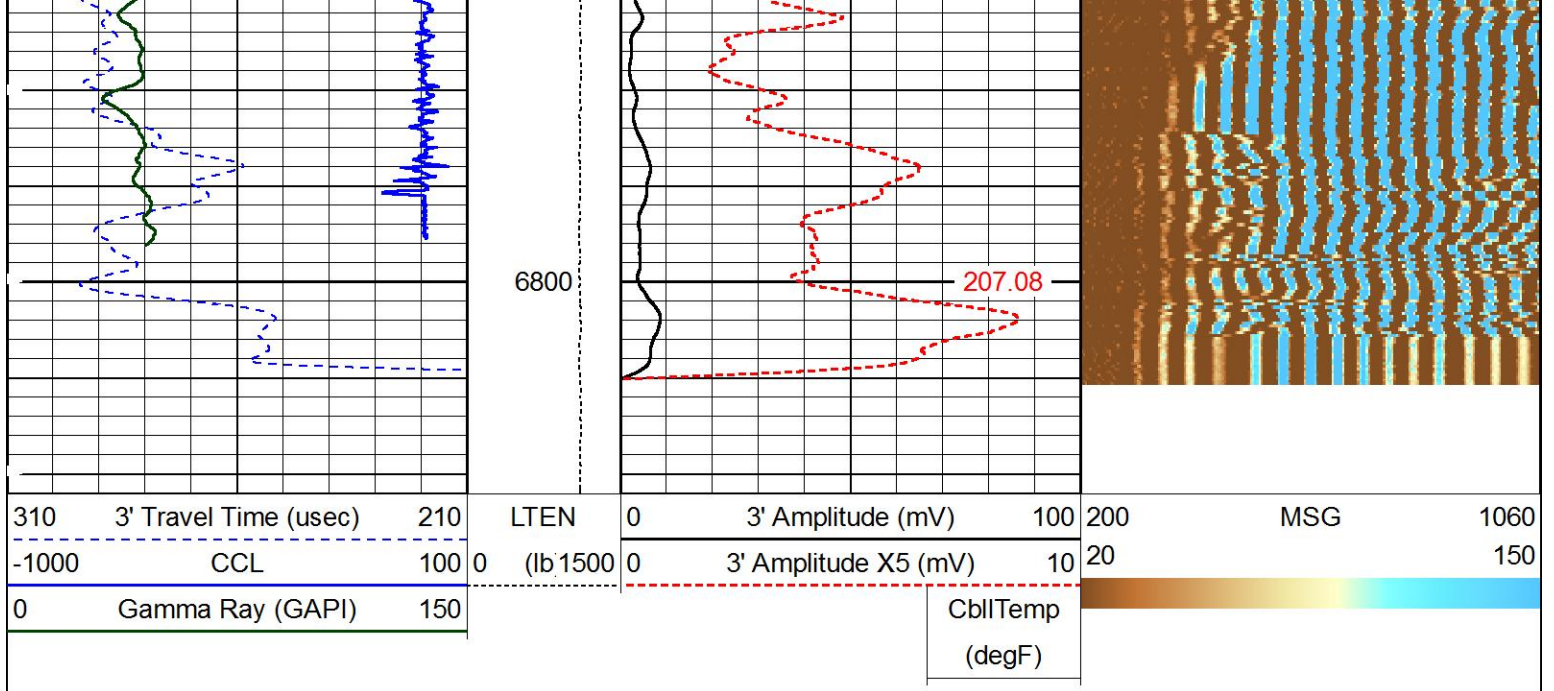
HALLIBURTON

5"=100'

Dataset Pathname REPEAT1
 Presentation Format 1_ss_cblm
 Dataset Creation Sun Jul 17 09:55:00 2016
 Charted by Depth in Feet scaled 1:240

310	3' Travel Time (usec)	210	LTEN	0	3' Amplitude (mV)	100	200	MSG	1060
-1000	CCL	100	0 (lb1500)	0	3' Amplitude X5 (mV)	10	20		150
0	Gamma Ray (GAPI)	150							
					CblTemp (degF)				





REPEAT PASS

HALLIBURTON

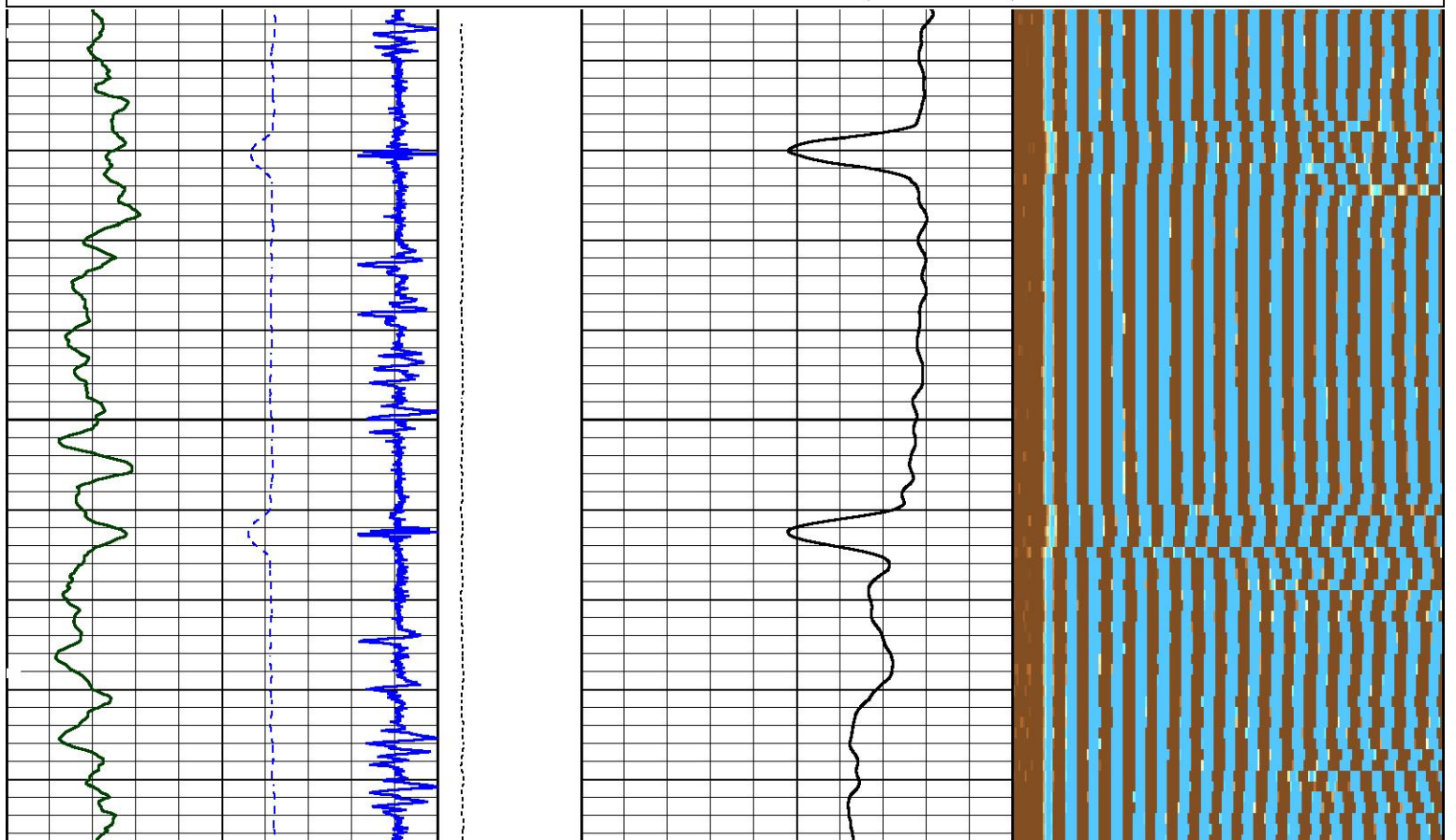
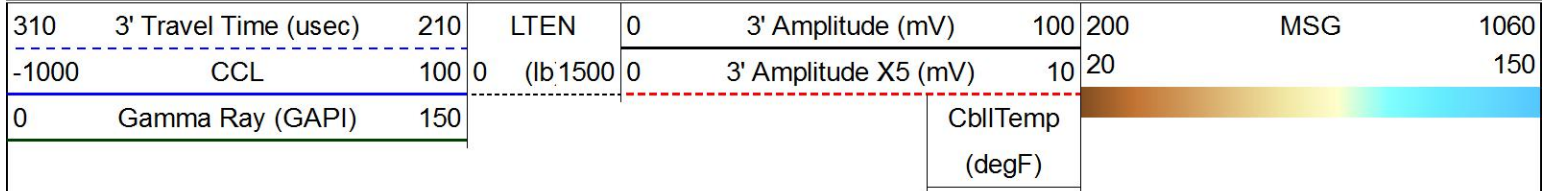
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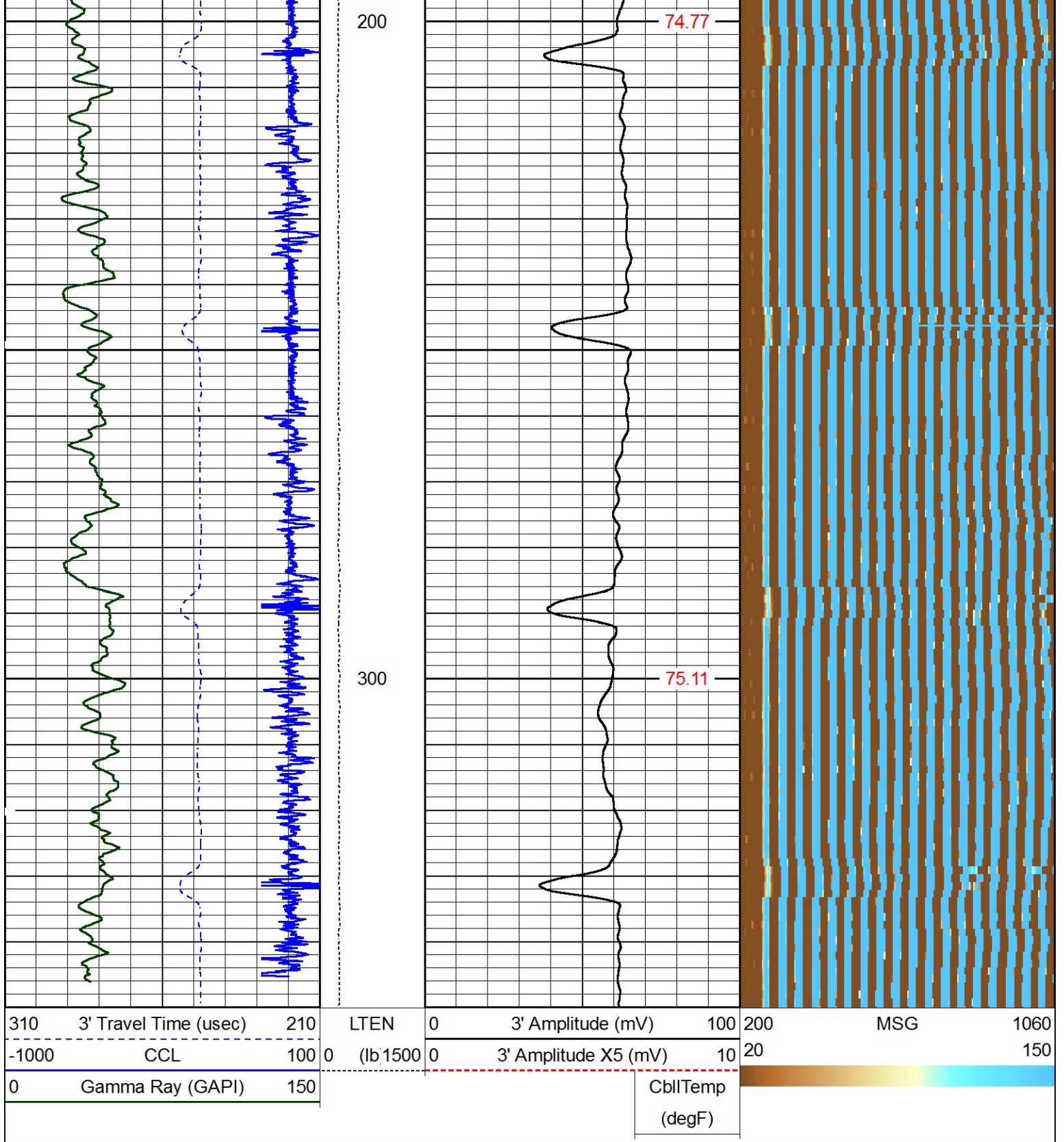
FREE PIPE PASS

HALLIBURTON

5"=100'

Database File ursa_tom_41a.db
 Dataset Pathname free2
 Presentation Format 1_ss_cblm
 Dataset Creation Sun Jul 17 09:09:56 2016
 Charted by Depth in Feet scaled 1:240





HALLIBURTON

FREE PIPE PASS

5"=100'

Calibration Report

Database File ursa_tom_41a.db
 Dataset Pathname REPEAT1
 Dataset Creation Sun Jul 17 09:55:00 2016

Reservoir Monitor Tool I Calibration Report

Serial-Model: 11680605-A
 Shop Calibration Performed: Wed Jul 13 15:33:10 2016

Carbon/Oxygen Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	95.00	80.00	15.00	+/-15.00	V
ITCR2	3142	3250	-108	+/-250	cps

Near Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0246	5.58	<6.00
Fe	207	206 +/-2	0.0940	----	----
NGAIN = 0.994		NZOFF = 0.6			

Far Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0388	5.12	<6.50
Fe	209	208 +/-2	0.0914	----	----
FGAIN = 0.992		FZOFF = 0.3			

Flask Temperature 73.0 degF

Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.44	0.45	-0.01	+/-0.02	
LIRI2	1.36	1.36	0.00	+/-0.05	
TCCR2	5240	5000	240	+/-1000	cps
ITCR2	3133	3200	-67	+/-250	cps

Sigma Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	95.00	80.00	15.00	+/-15.00	V
FCAP	10378	10000	378	+/-500	cps

Horizontal Water Tank

Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.94	0.95	-0.01		
N/F Inel Norm	0.62	0.61	0.01		
RNF	1.06	1.07	-0.01	+/-0.12	
RINC	1.61	1.64	-0.03	+/-0.18	
SGFN	24.09	24.00	0.09	+/-0.50	cu
SGFF	22.90	22.85	0.05	+/-0.50	cu
FSIN	24969	24000	969	+/-2000	cps
FCAP	10530	10000	530	+/-1000	cps
NFTR	0.83			<5.00	
FFTR	0.89			<5.00	
NBKG	133			<500	cps
FBKG	102			<500	cps
RTN	0.41	0.40	0.01	+/-0.10	usec
RTF	0.44	0.40	0.04	+/-0.10	usec

Calibration Software Modules

HRMTI Module 2015.5.4.0
 RMTI Module 2015.5.15.1

Log Data Acquisition Software Modules

HRMTI Module 2015.5.4.0
 RMTI Module 2015.5.15.1

Cement Bond Log Shop Calibration Report

Serial-Model: 11794522-A

Free Pipe Calibration

	Measured	Units
TT	248.7	usec
Amplitude	262.5	mV
Log Base Line	9.4	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	0.321	

Gamma Ray Calibration Report

Type / Serial: 002 / 12105787

SHOP CALIBRATION

Wed Jul 13 14:17:13 2016

	Counts/Sec.	Gain	Offset	Jig	Units
Background	27.9				cps
Calibrator	197.3	1.4165			cps GAPI/cps

PRIMARY VERIFICATION

Background	39.6				cps
Calibrator	280.8				cps
Difference				241.2	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)	
			STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00	
CCL	34.87						
GR	32.61			TTTCU-002 (12105787) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
				XHU-003 (11983708) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
				CENT-CASTM-CENT (00002) CAST M INLINE CENTRALIZER	2.16	3.13	25.00

Temp	22.89					
TT3FT	20.64		HCBLM-A (11794522) Halliburton HCBLM Tool	9.38	2.75	116.00
AMP3FT	20.64					
WVF5FT	19.68					
WVF3FT	16.16		CENT-CASTM-CENT (00003) CAST M INLINE CENTRALIZER	2.16	3.13	25.00
RmtTFGT	8.25					
RmtTNGT	7.75		RMTI-A (11680605) Halliburton RMTI Tool	14.00	2.13	77.00
LLMTEN	0.00					
RmtFP5V	0.00					
RmtNFwvMcsPr	0.00					
RmtCommFWar	0.00					
		Dataset: ursa_tom_41a.db: field/well/run1/MAIN1 Total length: 38.44 ft Total weight: 351.00 lb O.D.: 3.13 in				

Company	URSA OPERATING CO., LLC.				
Well	TOMPKINS 41A-08-07-95				
Field	PARACHUTE				
County	GARFIELD	State	CO		
HALLIBURTON	CEMENT BOND LOG FIELD COPY				