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CEMENT BOND LOG

Company Extraction Oil and Gas, Inc.
Well 12W-20-8C
Field Wattenberg
County Adams State Colorado

API # : 05 001 10166
Location: NW/SW
2408 FSL
686 FWL

SEC: 12 TWP: 1S RGE: 66W

Other Services

Elevation
K.B. 5066
D.F. 5065
G.L. 5037

Company Extraction Oil and Gas, Inc.
Well 12W-20-8C
Field Wattenberg
County Adams
State Colorado

Permanent Datum: Ground Level Elevation: 5037
Log Measured From: Kelly Bushing , 29 ft. above Permanent Datum.
Drilling Measured From: Kelly Bushing

Date	10 January 2019
Run Number	One
Plug Back T.D. Driller	----
Plug Back T.D. Logger	----
Bottom Logged Interval	8036
Top Log Interval	Surface
Type Fluid	Water
Density / Viscosity	----
Max. Recorded Temp.	229
Time Logger on Bottom	10:00
Equipment Number	GD114
Location	Casper
Recorded By	GS Yarbro
Witnessed By	Parras

Casing Record				Tubing Record			
Size	Weight	From	To	Size	Weight	From	To
9 5/8	36	29	----				
5 1/2	20	29	----				

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Ticket # : RM0119PCBW129
Your Crew Today: Cheesman, Pena
Log Correlated to: Surface

Cement Data	
Date Cemented	----
Primary / Squeeze	Primary
Type / Weight	----
Main Pass Press.	Zero
Repeat Pass Press.	Zero

Bond Index	
Index %	Est Top Depth
20 % Bond	180
40 % Bond	360
60 % Bond	2620
80 % Bond	5920
100 % Bond	----

Comments

Estmated Top of Cement
(20% Bond Index) @ 180

Thank you for using Gyrodata

Eric Regnier: Rocky Mountain Wireline Manager EricR@Gyrodata.com

Log Variables

Databased:\warrior\data\20190110_extraction_duck club 12w-20-8c_cbl\20190110_extraction_duck
Dataset field/well/run1/pass3/_vars_

Top - Bottom

BHTEMP_Src	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	CASEWGHT lb/ft	MAXAMPL mV	MaxAPIID in
TEMP	8.5	100	5.5	0.361	20	71.9	4.923

MINAMPL mV	MinAPIID in	MINATTN db/ft	PPT usec	TDEPTH ft
2.1	4.751	0	239	0

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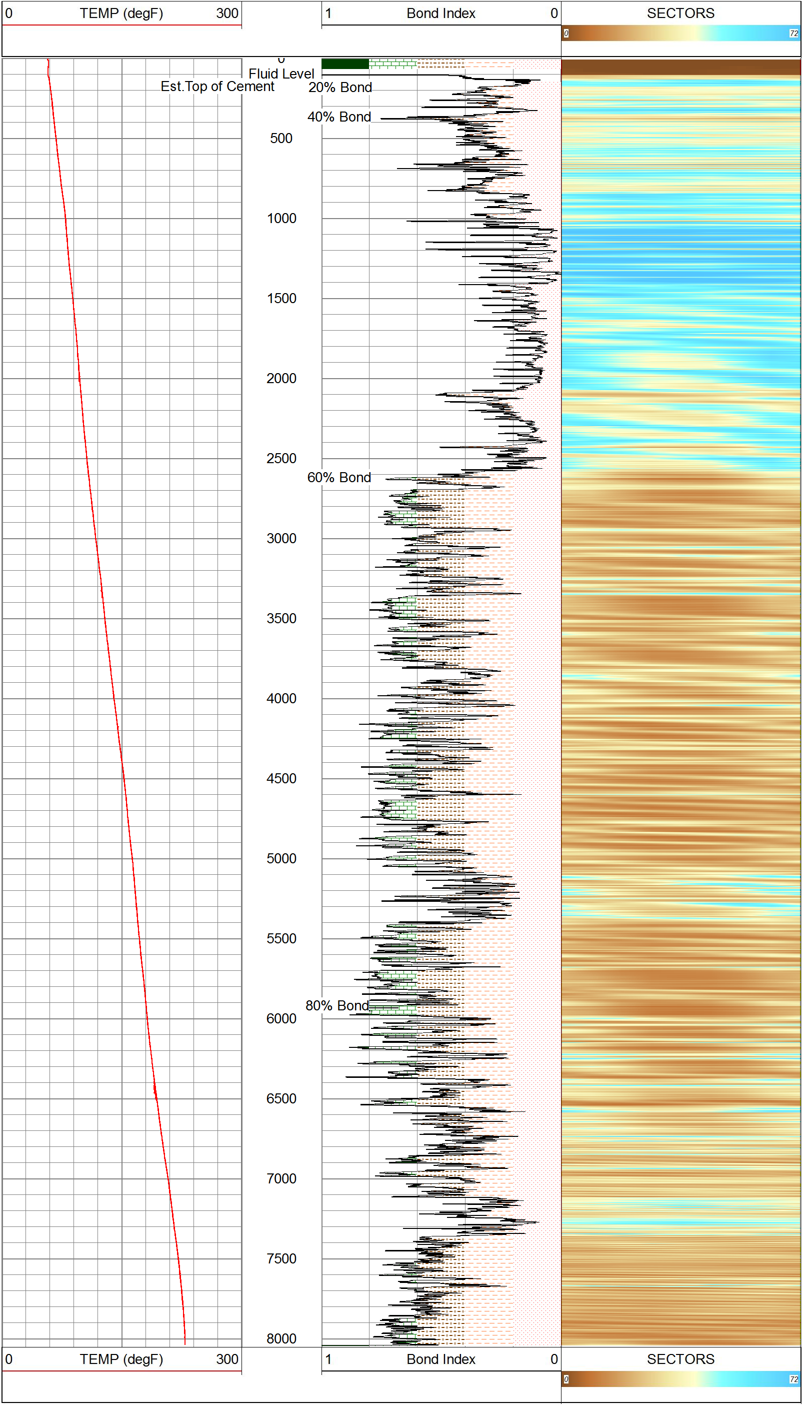
BOND INDEX

Calculated for 3000 PSI Compressive Strength Cement

Database File 20190110_extraction_duck club 12w-20-8c_cbl\20190110_extraction_duck club 12w-20-8c_cbl.db
Dataset Pathname ./././bndindx
Presentation Format BNDIND~1
Dataset Creation Thu Jan 10 11:26:08 2019
Charted by Depth in Feet scaled 1:7500



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MAIN PASS - Ran with 0 PSI

5 in / 100 ft

Database File	20190110_extraction_duck club 12w-20-8c_cbl\20190110_extraction_duck club 12w-20-8c_cbl.db
Dataset Pathname	pass3
Presentation Format	rcbl_8s
Dataset Creation	Thu Jan 10 09:59:23 2019
Charted by	Depth in Feet scaled 1:240

CCL
Gamma
0 (GAPI) 200
300(Line Tens (lb) 0
Predicted TT
TT
+[10 usec]-

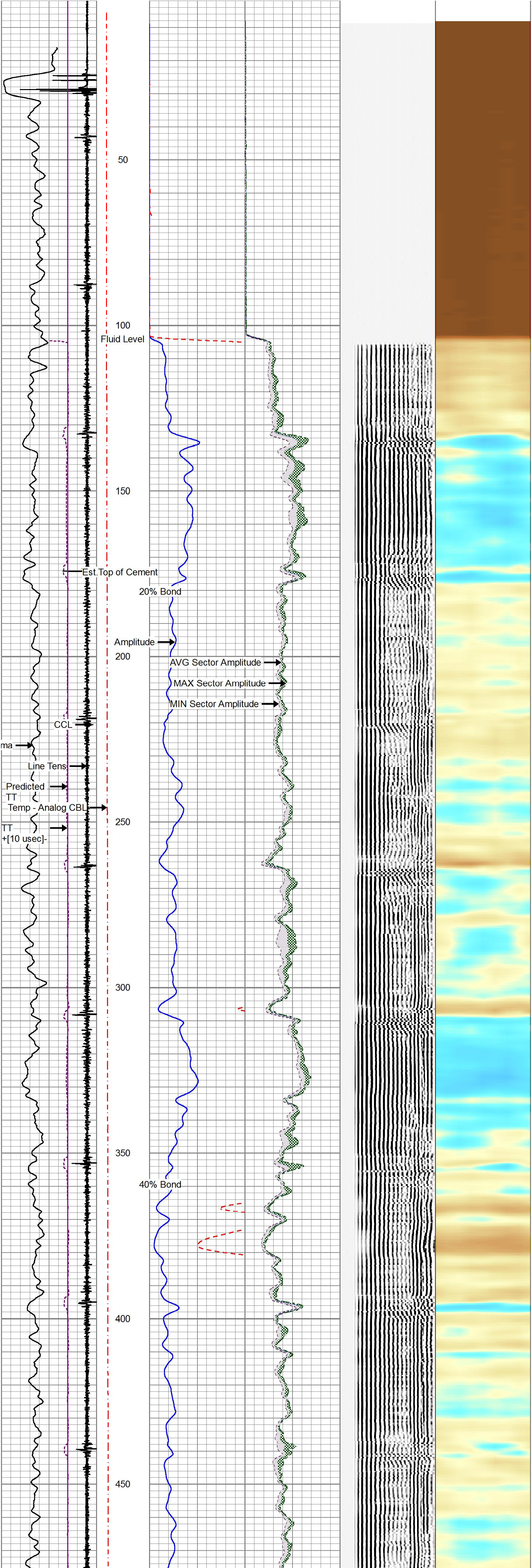
np - Analog C
(degF)
0 300

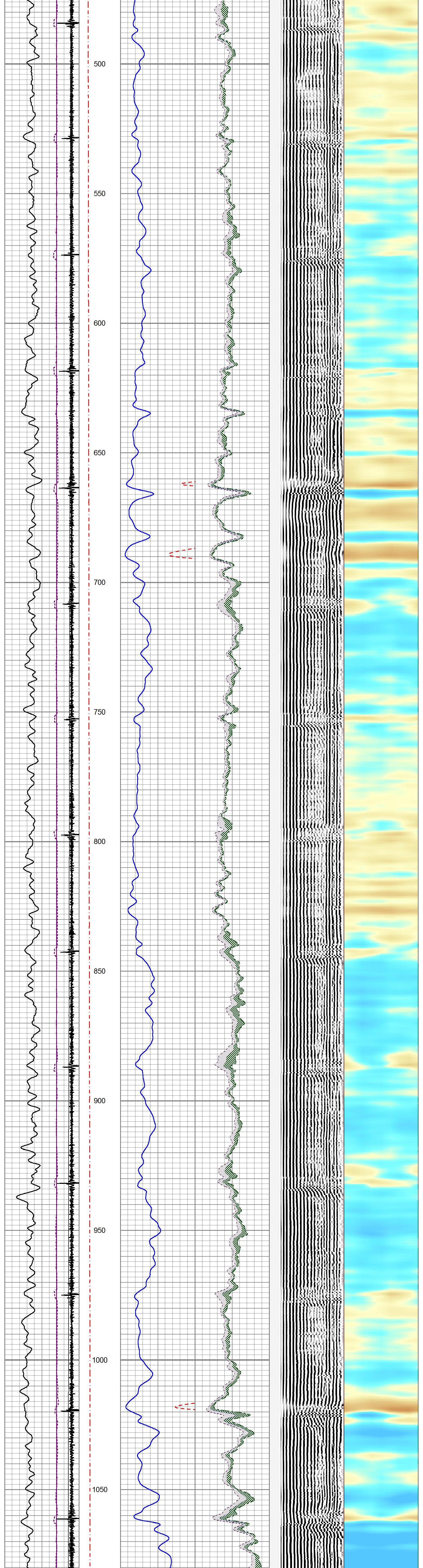
0 Amplitude (mV)100
Amplitude x10
0 (mV) 10

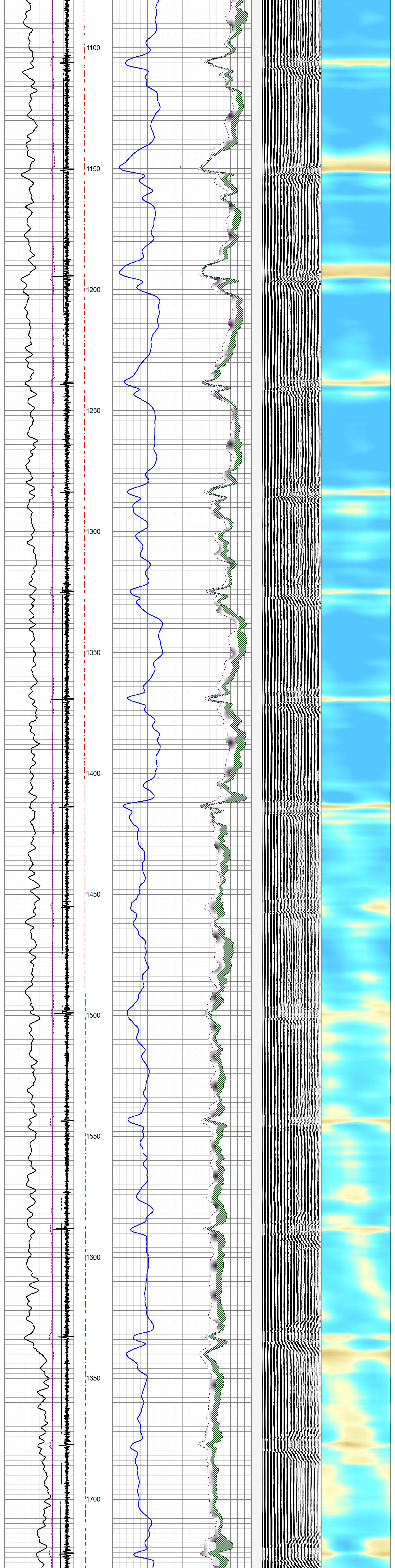
AVG Sector Amplitude
0 100
MAX Sector Amplitude
0 100
MIN Sector Amplitude
0 100

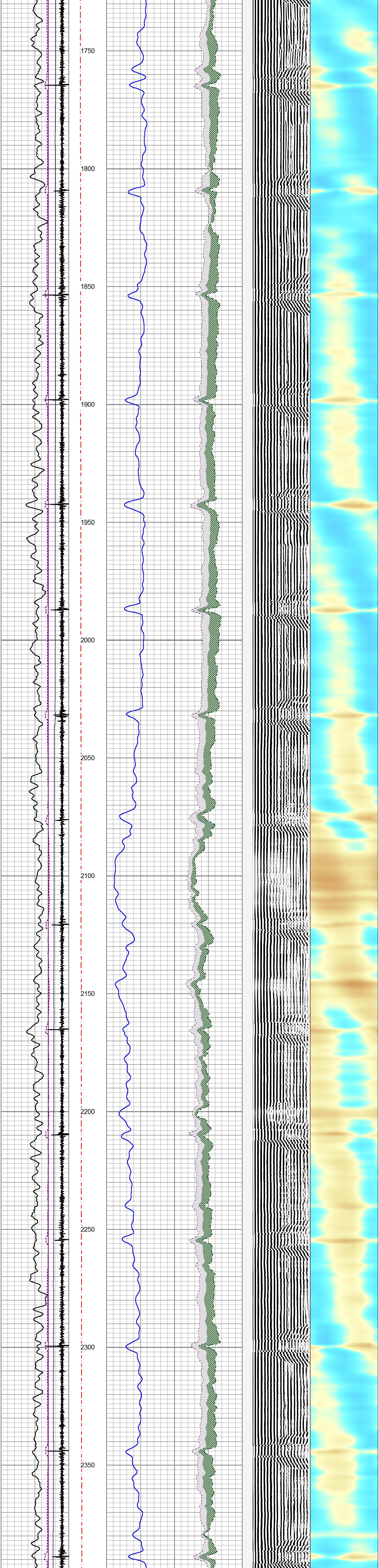
Acoustic Waveform
200 (usec) 1200

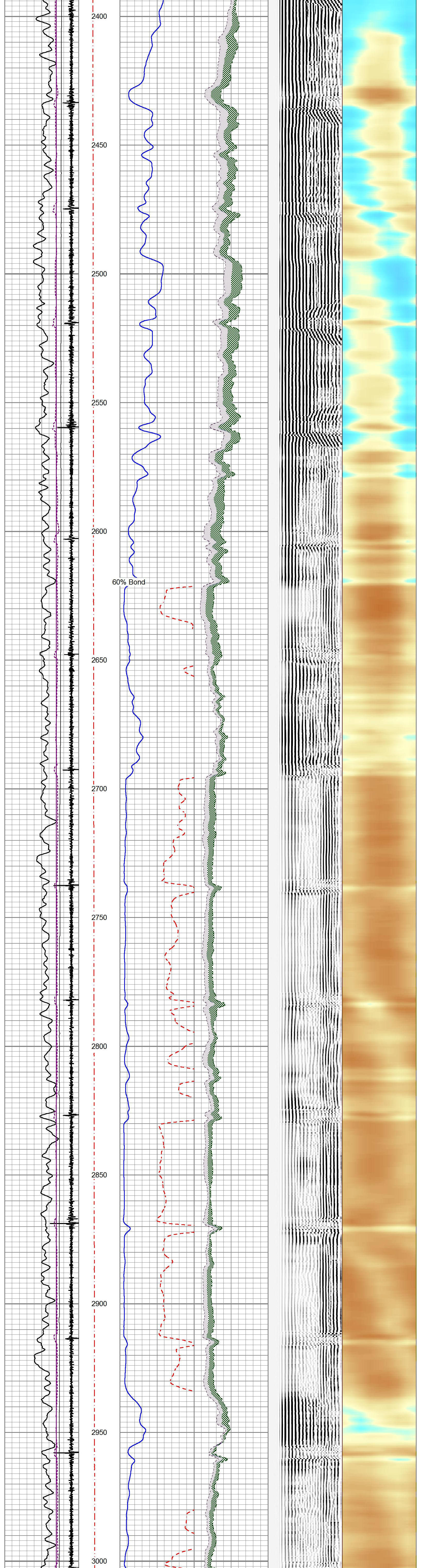
SECTORS
0 72

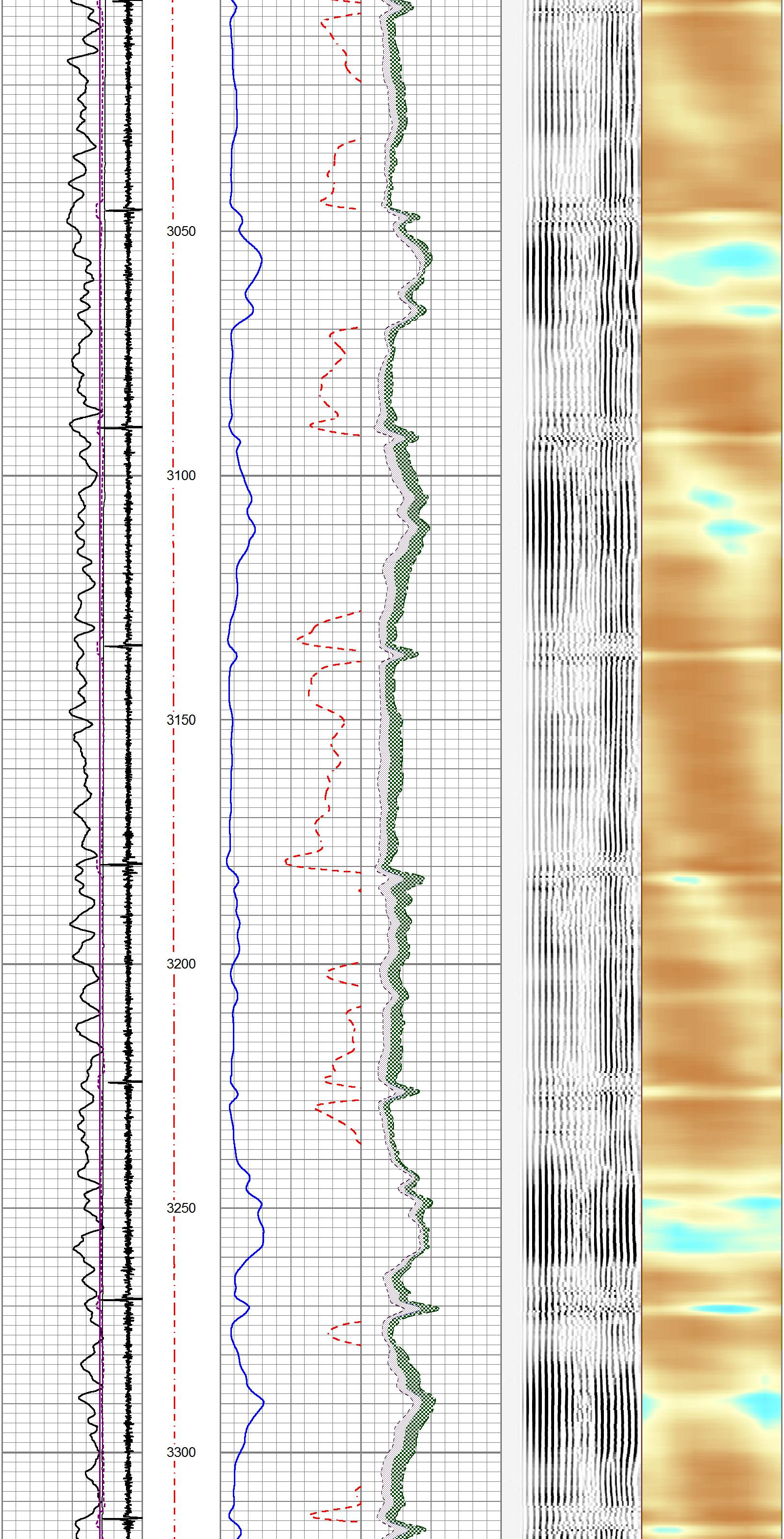


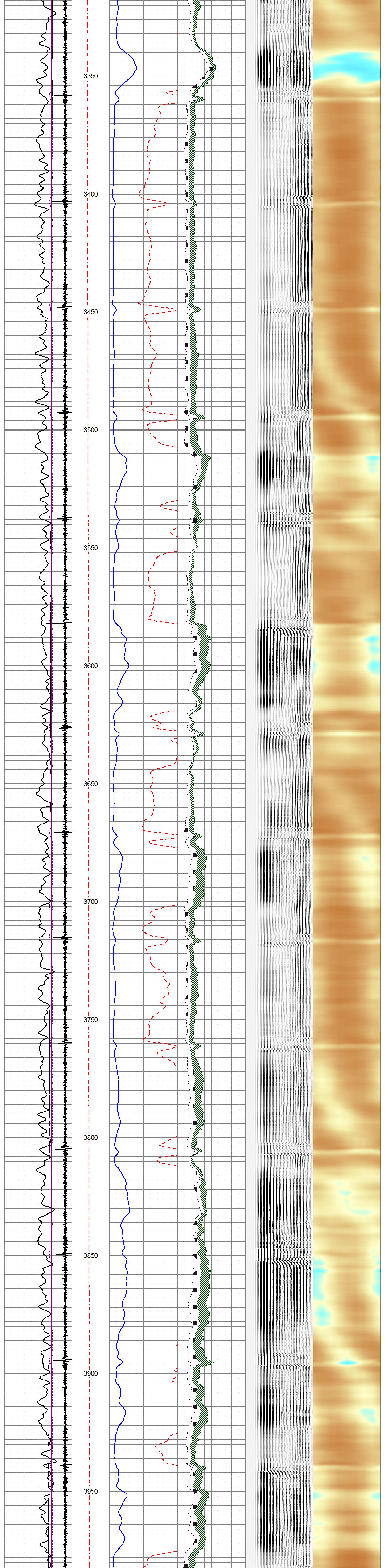


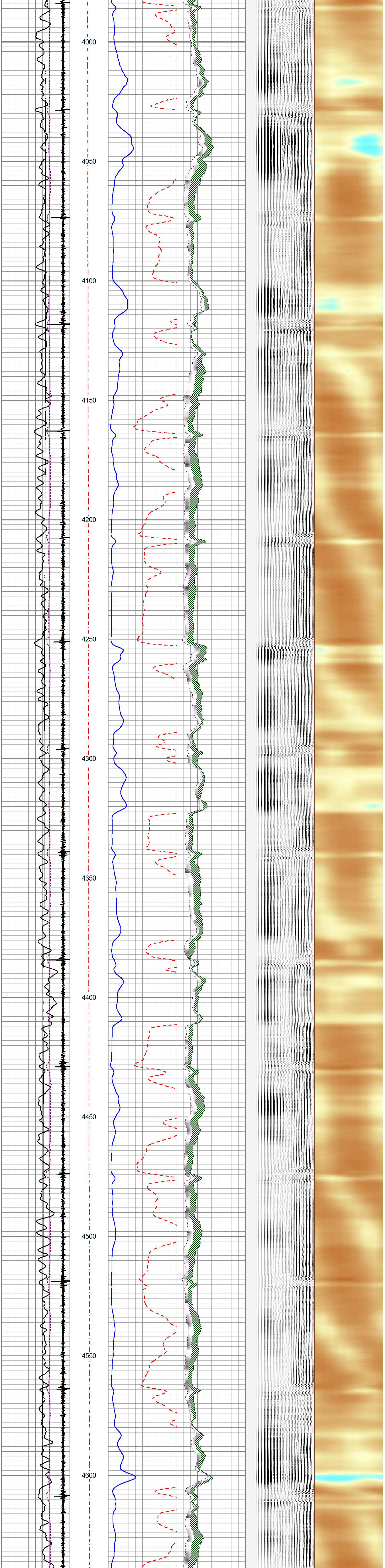


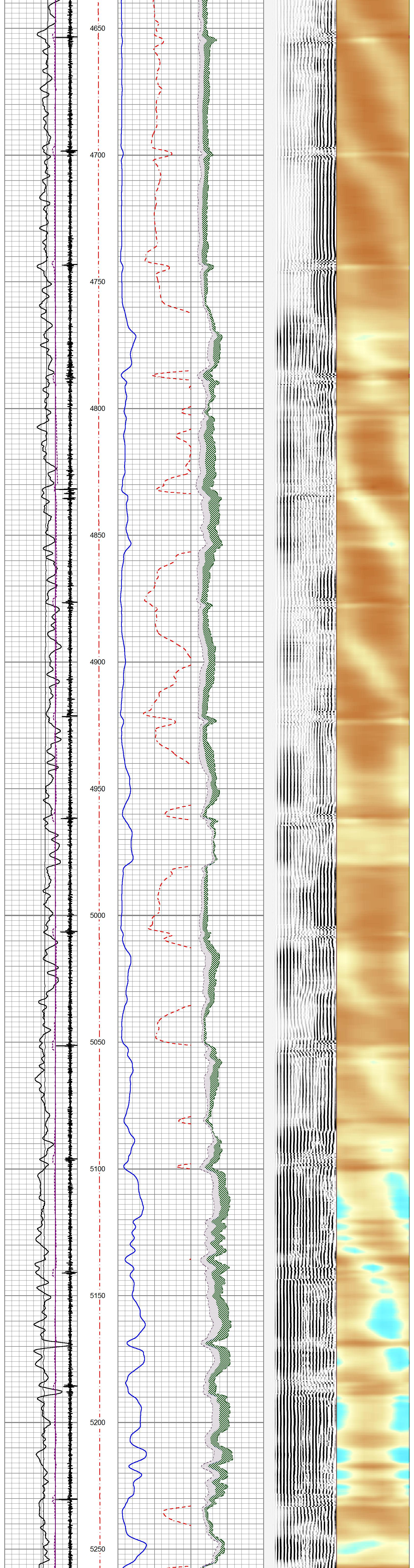


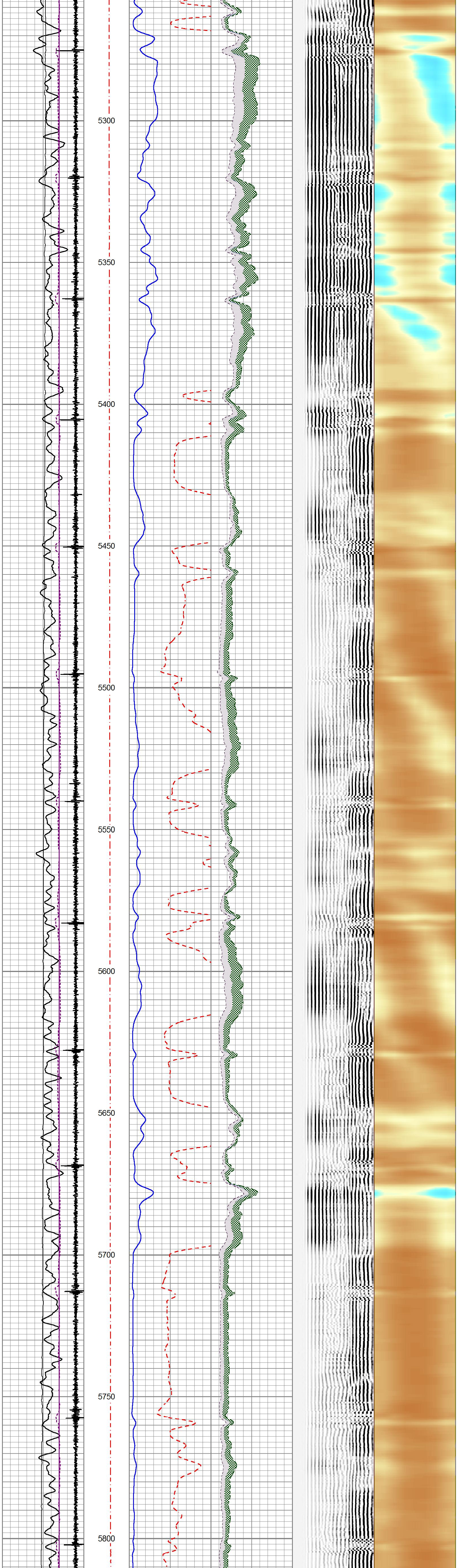


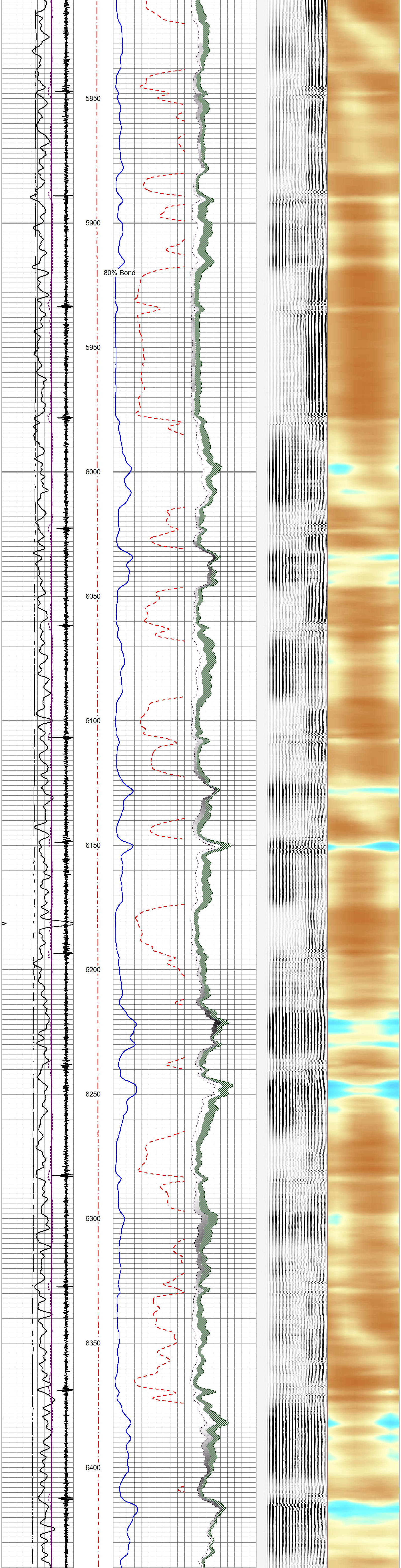


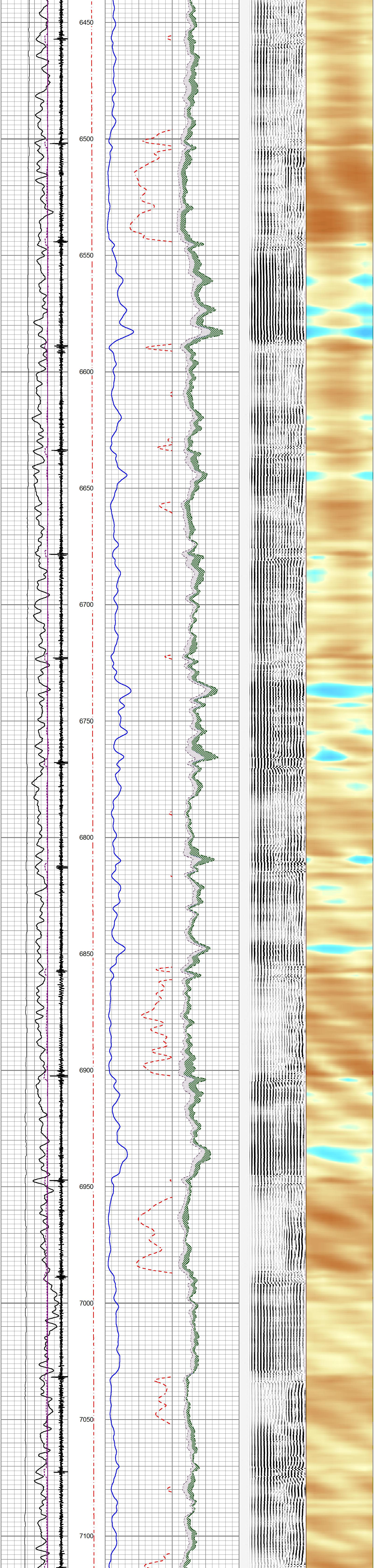

3350
3400
3450
3500
3550
3600
3650
3700
3750
3800
3850
3900
3950


4000
4050
4100
4150
4200
4250
4300
4350
4400
4450
4500
4550
4600

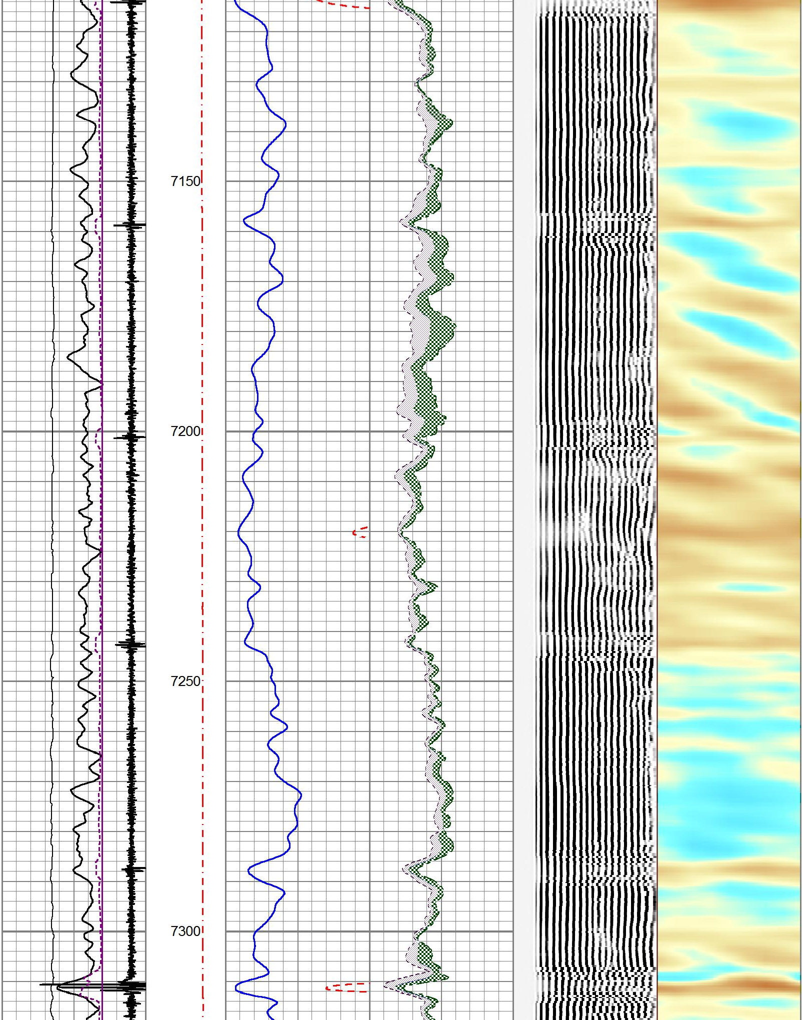

4650
4700
4750
4800
4850
4900
4950
5000
5050
5100
5150
5200
5250

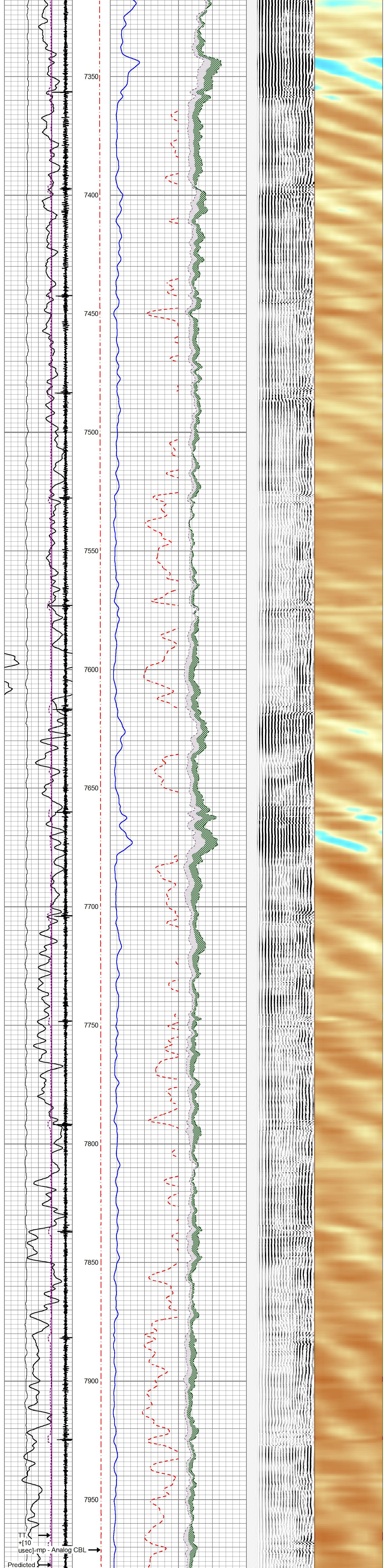

5300
5350
5400
5450
5500
5550
5600
5650
5700
5750
5800

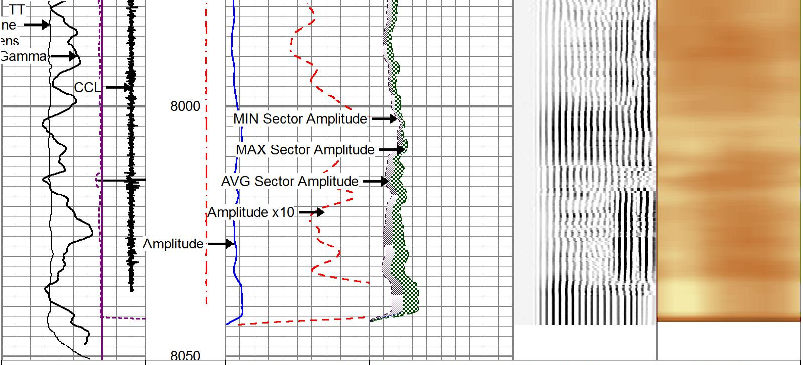

5850
5900
80% Bond
5950
6000
6050
6100
6150
6200
6250
6300
6350
6400



6450
6500
6550
6600
6650
6700
6750
6800
6850
6900
6950
7000
7050
7100


7150
7200
7250
7300





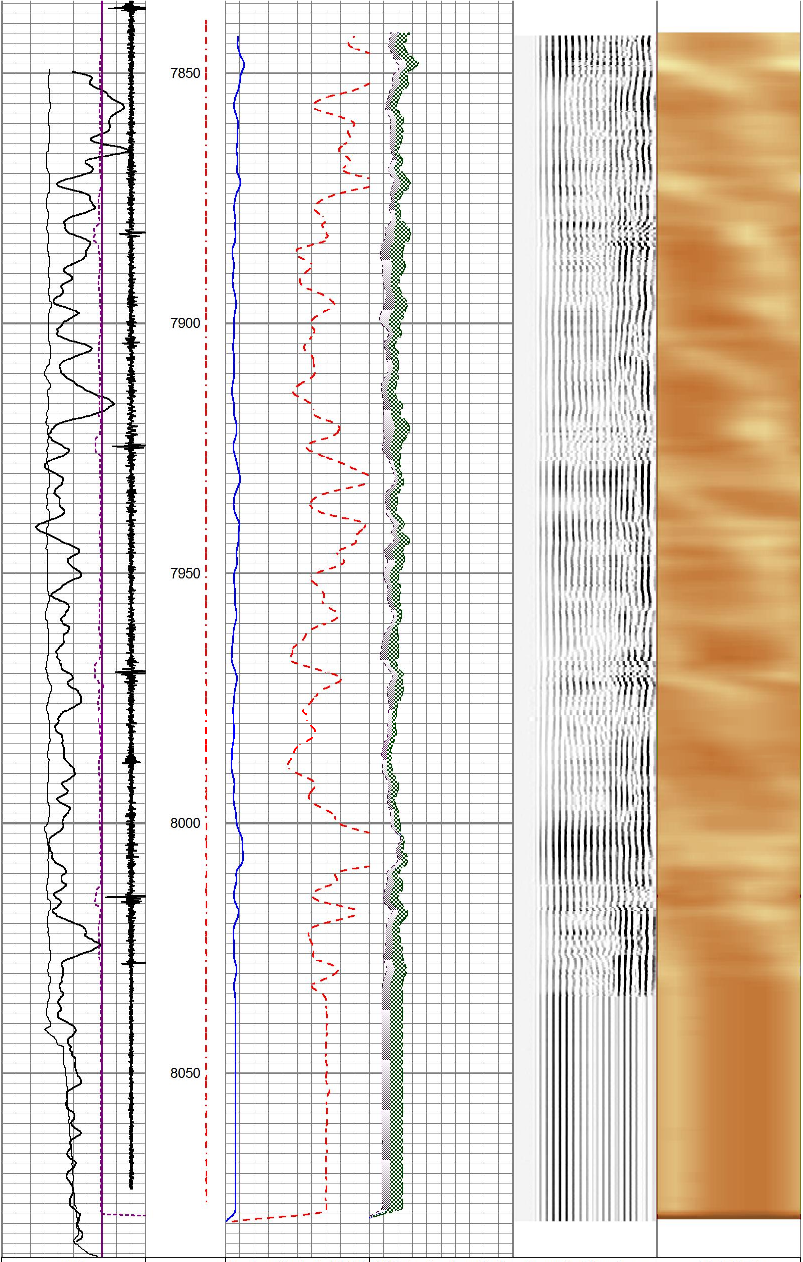
CCL	np - Analog C	0 Amplitude (mV)100	AVG Sector Amplitude	Acoustic Waveform	SECTORS
Gamma	(degF)	Amplitude x10	0 100	200 (usec) 1200	0 72
0 (GAPI) 200	0 300	0 (mV) 10	MAX Sector Amplitude		
300(Line Tens (lb) 0			0 100		
Predicted TT			MIN Sector Amplitude		
TT +[10 usec]-			0 100		

REPEAT PASS - Ran with 0 PSI

5 in / 100 ft

Database File 20190110_extraction_duck club 12w-20-8c_cbl\20190110_extraction_duck club 12w-20-8c_cbl.db
Dataset Pathname pass2
Presentation Format rcbl_8s
Dataset Creation Thu Jan 10 09:54:50 2019
Charted by Depth in Feet scaled 1:240

CCL	np - Analog C	0 Amplitude (mV)100	AVG Sector Amplitude	Acoustic Waveform	SECTORS
Gamma	(degF)	Amplitude x10	0 100	200 (usec) 1200	0 72
0 (GAPI) 200	0 300	0 (mV) 10	MAX Sector Amplitude		
300(Line Tens (lb) 0			0 100		
Predicted TT			MIN Sector Amplitude		
TT +[10 usec]-			0 100		



CCL	np - Analog C	0 Amplitude (mV)100	AVG Sector Amplitude	Acoustic Waveform	SECTORS
Gamma	(degF)	Amplitude x10	0 100	200 (usec) 1200	0 72
0 (GAPI) 200	0 300	0 (mV) 10	MAX Sector Amplitude		
300(Line Tens (lb) 0			0 100		
Predicted TT			MIN Sector Amplitude		
TT +[10 usec]-			0 100		

Calibration Report

Database File d:\warrior\data\20190110_extraction_duck club 12w-20-8c_cbl\20190110_extraction_duck club 12w-20-8c_c
Dataset Pathname pass3
Dataset Creation Thu Jan 10 09:59:23 2019

Gamma Ray Calibration Report

Serial Number:	ISHV2-02	
Tool Model:	2 3/4" TekCo	
Performed:	Wed Aug 22 11:07:35 2018	
Calibrator Value:	194.0	GAPI
Background Reading:	53.6	cps
Calibrator Reading:	293.4	cps
Sensitivity:	0.8092	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	ISF06-04	
Tool Model:	2 3/4" RIB Analog	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	112.540	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.003	1.499	0.000	72.000	48.126	-0.124
CAL	-0.004	0.749				
5'	0.006	1.576	0.000	72.000	45.867	-0.269
SUM						
S1	0.024	1.591	0.000	72.000	45.951	-1.093
S2	0.027	1.526	0.000	72.000	48.039	-1.306
S3	0.027	1.490	0.000	72.000	49.213	-1.339
S4	0.023	1.494	0.000	72.000	48.927	-1.104
S5	0.016	1.443	0.000	72.000	50.453	-0.827
S6	0.015	1.467	0.000	72.000	49.603	-0.755
S7	0.022	1.498	0.000	72.000	48.771	-1.070
S8	0.023	1.498	0.000	72.000	48.784	-1.101

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.004	0.749	1.000	0.000

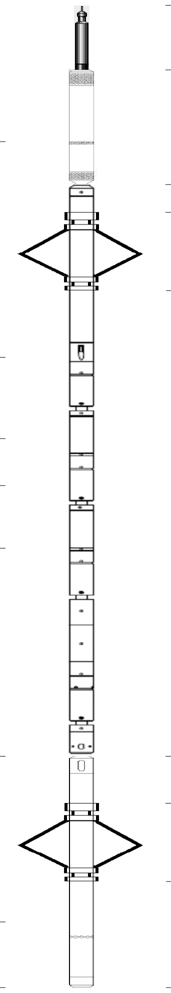
Air Zero Calibration, performed (Not Performed):

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.000	0.000	0.000
5'	0.000	0.000	0.000
SUM			
S1	0.000	0.000	0.000
S2	0.000	0.000	0.000
S3	0.000	0.000	0.000
S4	0.000	0.000	0.000
S5	0.000	0.000	0.000
S6	0.000	0.000	0.000
S7	0.000	0.000	0.000
S8	0.000	0.000	0.000

Temperature Calibration Report

Serial Number:	ISF06-04			
Tool Model:	2 3/4" RIB Analog			
Performed:	Tue Jan 08 11:48:09 2019			
	Reference		Reading	
Low Reference:	0.00	degF	0.00	usec
High Reference:	1.00	degF	1.00	usec
Gain:	0.33			
Offset:	0.00			
Delta Spacing	1			

Schematic



Sensor	Offset (ft)
CCL	13.50
TEMP	10.05
WVFS8	8.76
WVFS7	8.76
WVFS6	8.76
WVFS5	8.76
WVFS4	8.76
WVFS3	8.76
WVFS2	8.76
WVFS1	8.76
WVF3FT	8.01
WVF5FT	7.01
WVFSYNC	3.68
WVFTEMP	3.68
WVFCAL	3.68
GR	1.04
LOCTIM	0.00
UTCTIM	0.00
PMON	0.00

Description	Length (ft)	O.D. (in)	Weight (lb
CableHead-TitanConeType2	1.03	1.44	3.60
CCL_Log-2 3/4" TekCo (IPSN7-03)	1.83	2.75	33.00
Antelope-Overbody	1.25	2.75	
RBTA-2 3/4" RIB Analog (ISF06-04)	9.13	2.75	102.00
Antelope-Overbody	1.25	2.75	
GR_Log-2 3/4" TekCo (ISHV2-02)	3.68	2.75	47.00

Dataset:	20190110_extraction_duck club 12w-20-8c_cbl.db: field/well/run1/pass3
Total length:	15.67 ft
Total weight:	185.60 lb
O.D.:	2.75 in

gyrodata

Company	Extraction Oil and Gas, Inc.		
Well	12W-20-8C		
Field	Wattenberg		
County	Adams		
State	Colorado	**Country**	U.S.A.