CEMENT BOND LOG

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Company	Extraction Oil and Gas, Inc.		
Well	12W-20-5C		
Field	Wattenberg		
County	Adams	State	Colorado
API # :	05 001 10159		
Location:	NW/SW 2491 FSL 690 FWL	Other Services	
SEC: 12	TWP: 1S	RGE: 66W	Elevation K.B. 5066 D.F. 5065 G.L. 5037

Company Extraction Oil and Gas, Inc.
Well 12W-20-5C
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	8136
Top Log Interval	Surface
Type Fluid	Water
Density / Viscosity	----
Max. Recorded Temp.	230
Time Logger on Bottom	16:30
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 # : RM0119PCBW132
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	130
40 % Bond	130
60 % Bond	250
80 % Bond	2540
100 % Bond	

Comments

Estimated Top of Cement
(40% bond Index) @130

Thank you for using Gyrodata
Eric Regnier: Rocky Mountain Wireline Manager EricR@Gyrodata.com

Log Variables

Databased:\warrior\data\20190110_extraction_duck club 12w-20-5c_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	238	0

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BOND INDEX

Calculated for 3000 PSI Compressive Strength Cement

Database File 20190110_extraction_duck club 12w-20-5c_cbl\20190110_extraction_duck club 12w-20-5c_cbl.db
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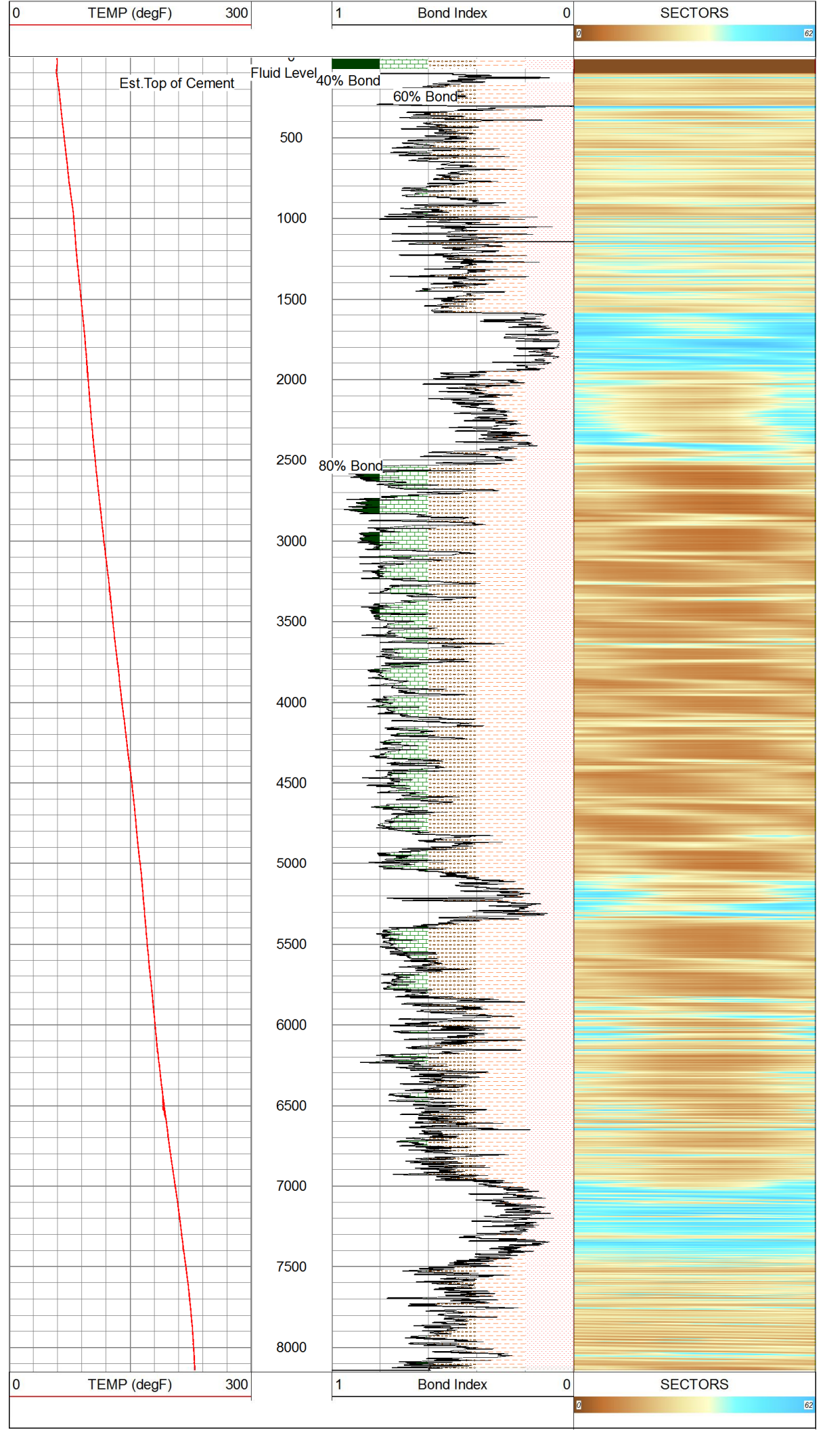
Presentation Format BNDIND~1
Dataset Creation Thu Jan 10 19:10:30 2019
Charted by Depth in Feet scaled 1:7500



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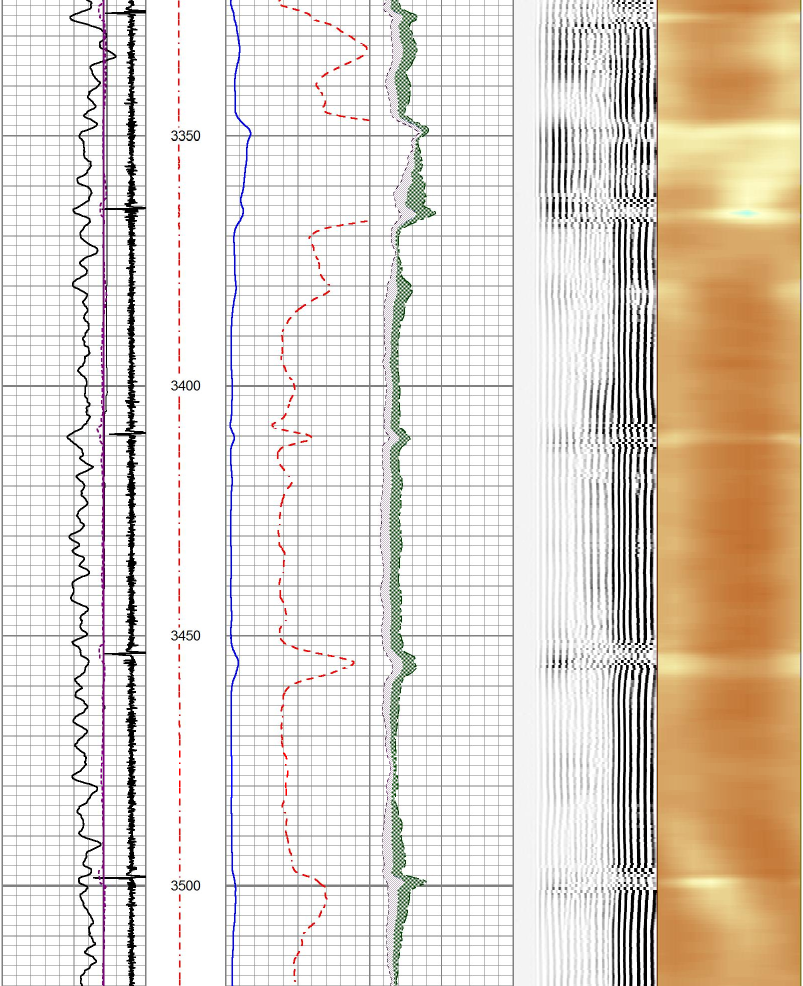
MAIN PASS - Ran with 0 PSI

5 in / 100 ft

Database File 20190110_extraction_duck club 12w-20-5c_cbl\20190110_extraction_duck club 12w-20-5c_cbl.db
Dataset Pathname pass3
Presentation Format rcbl_8s
Dataset Creation Thu Jan 10 17:30:57 2019
Charted by Depth in Feet scaled 1:240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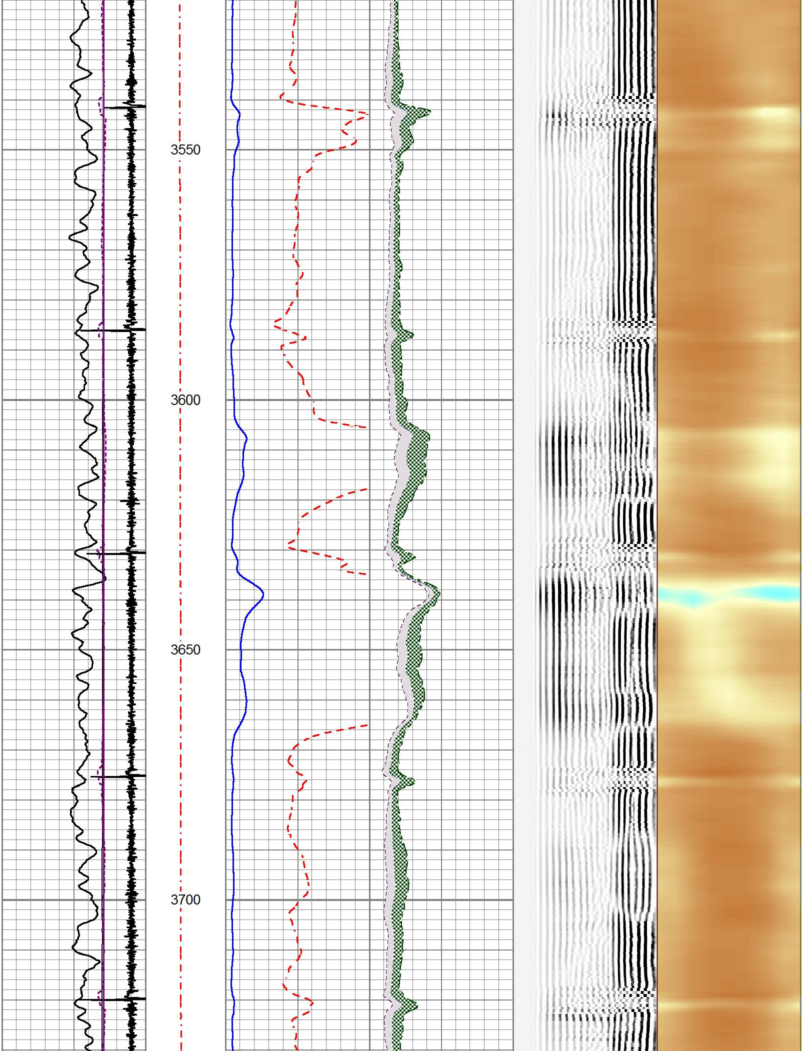
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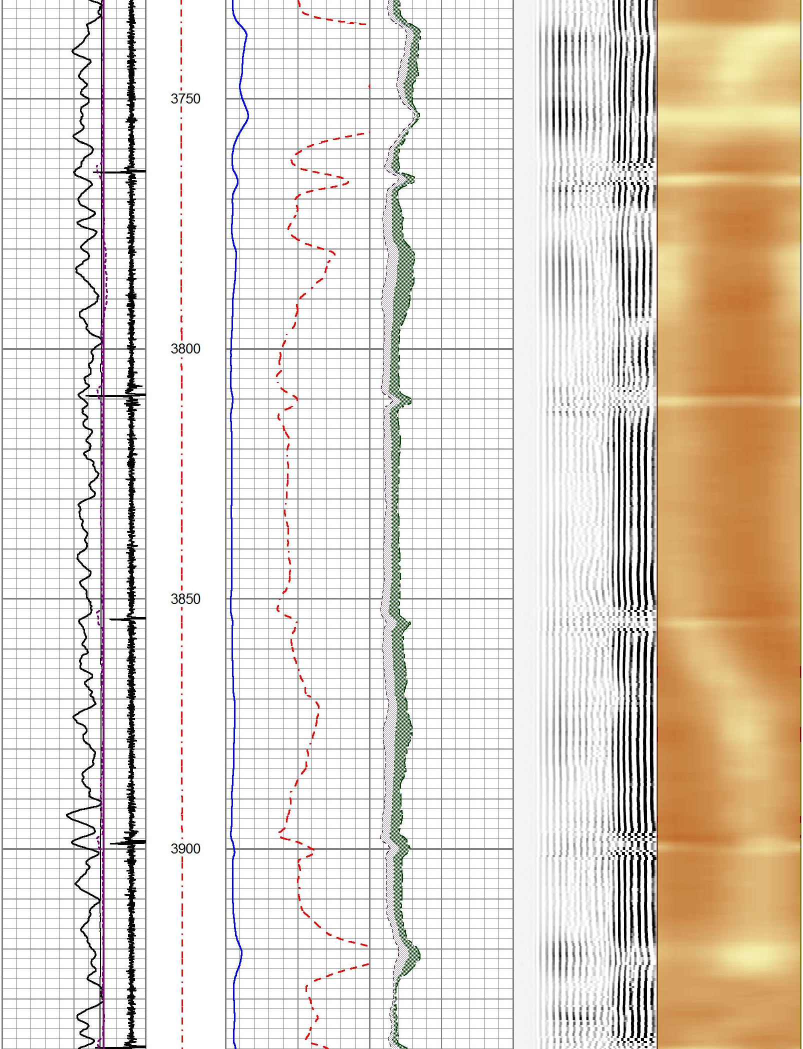
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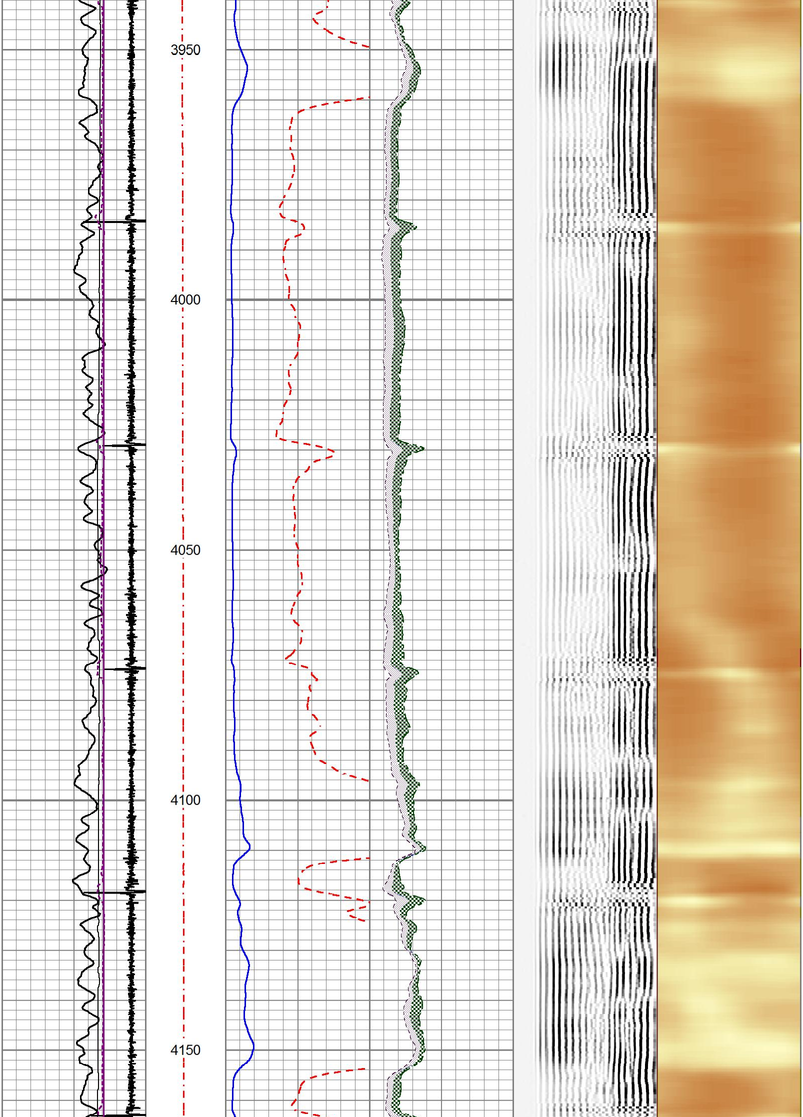
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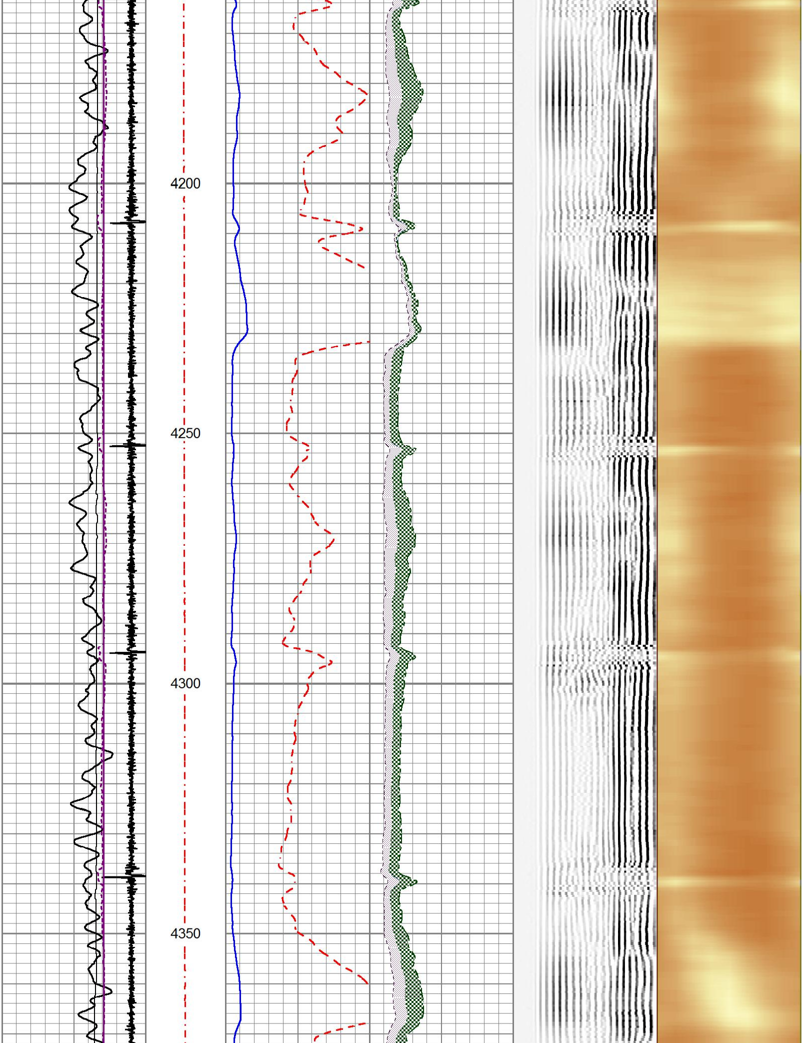
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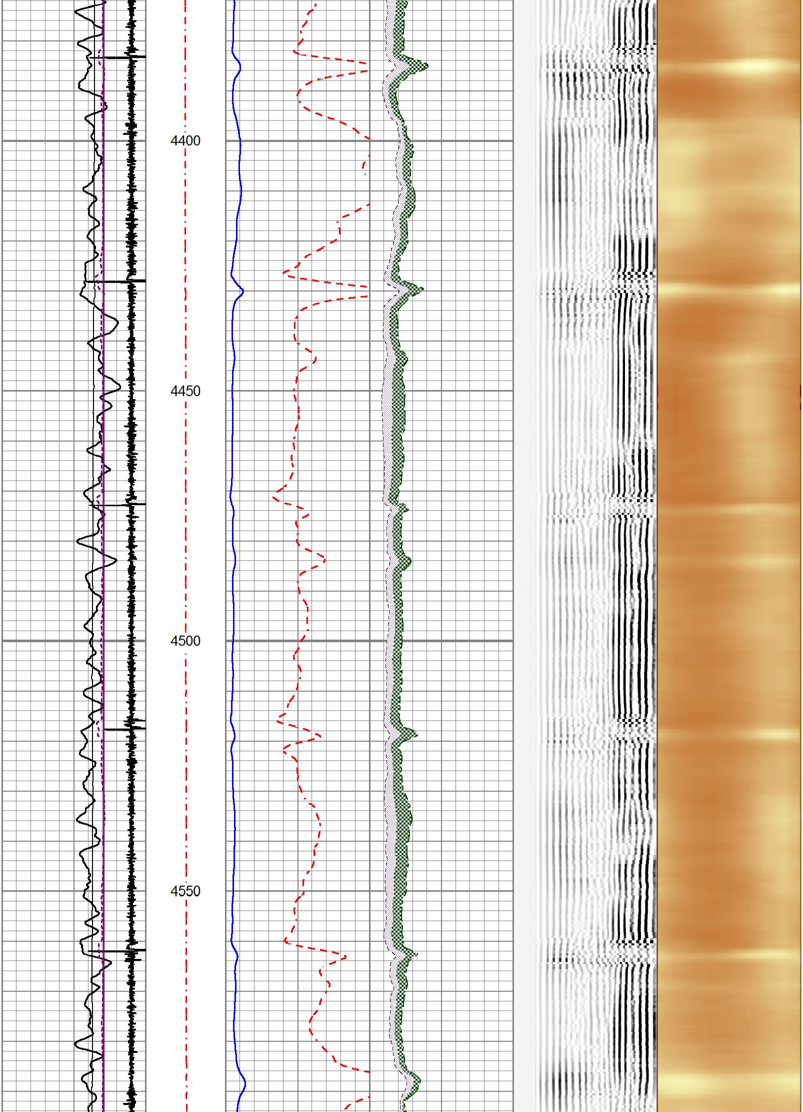
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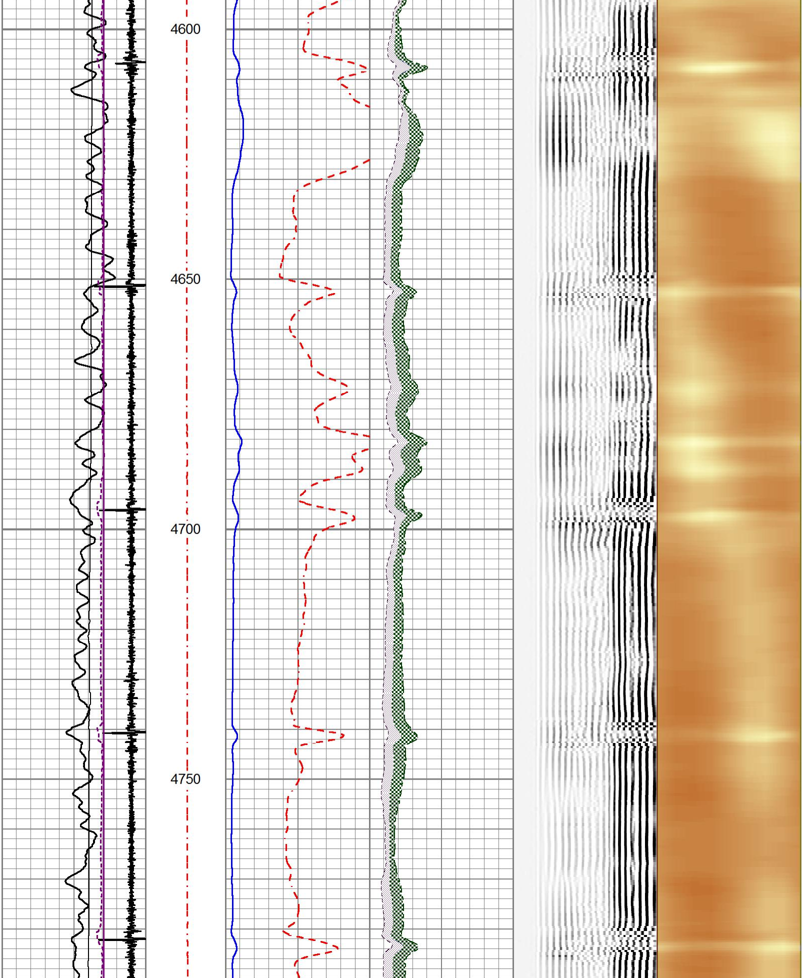
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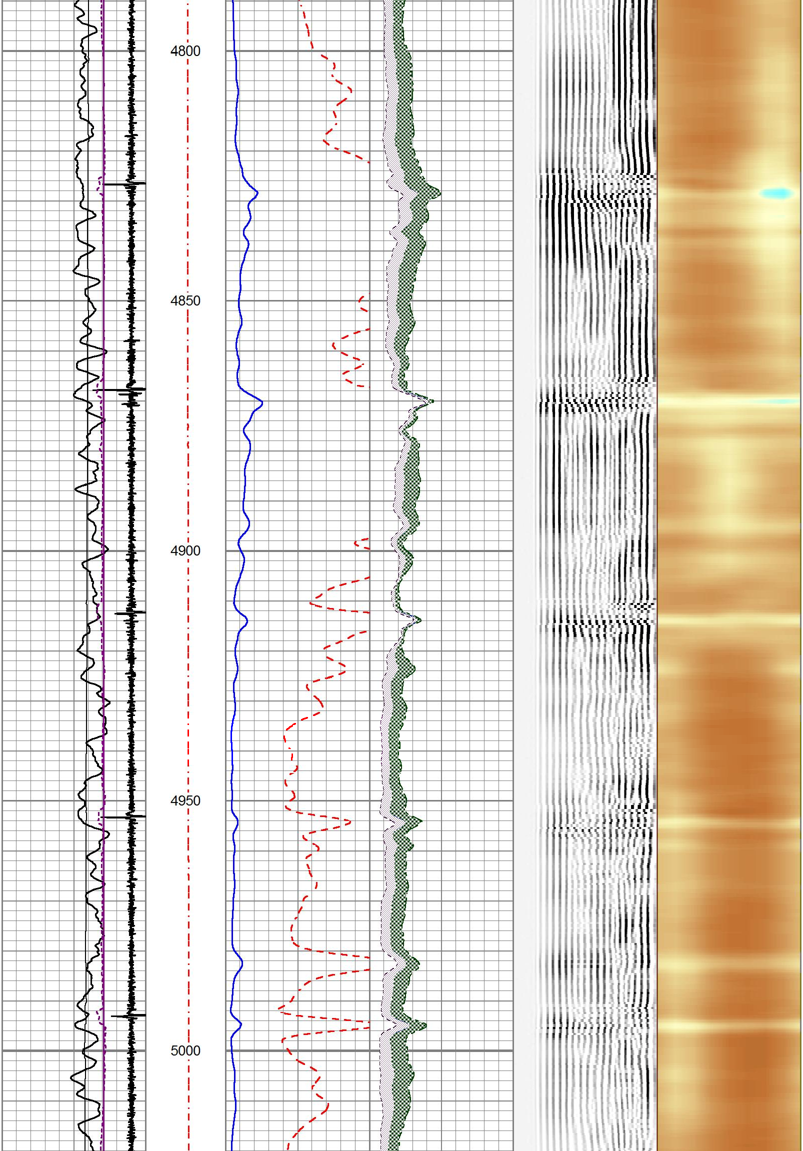
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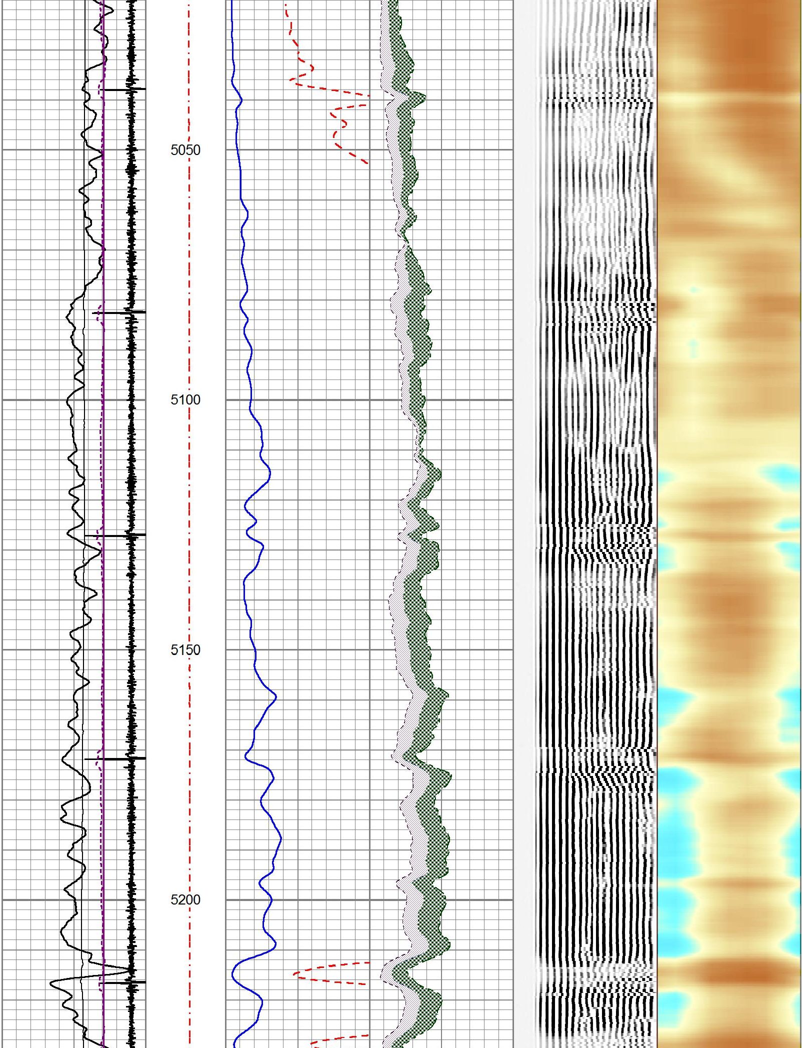
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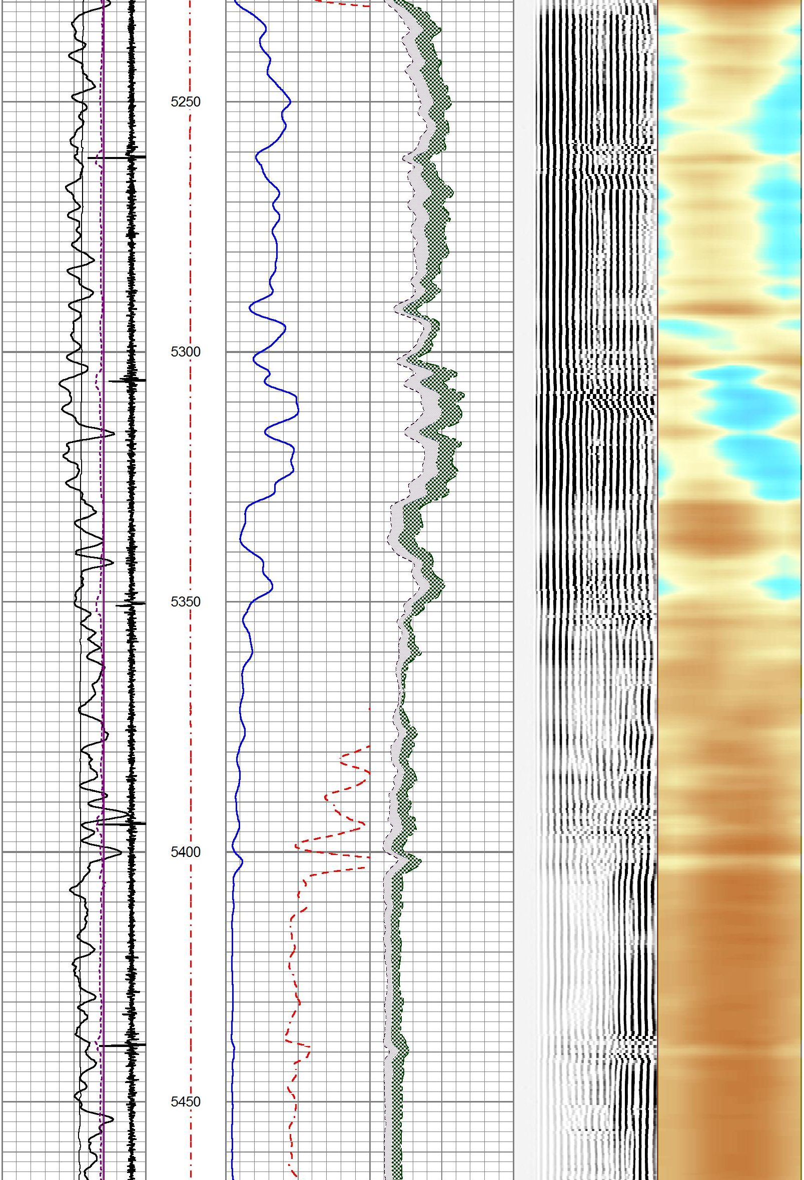
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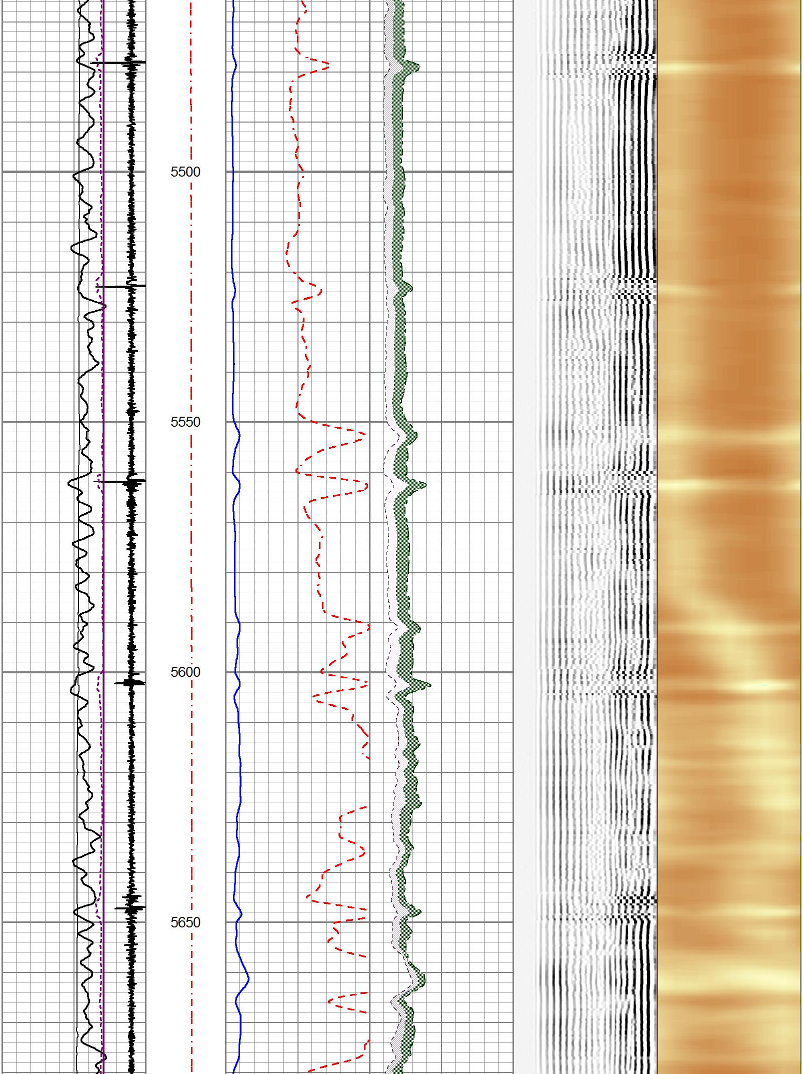
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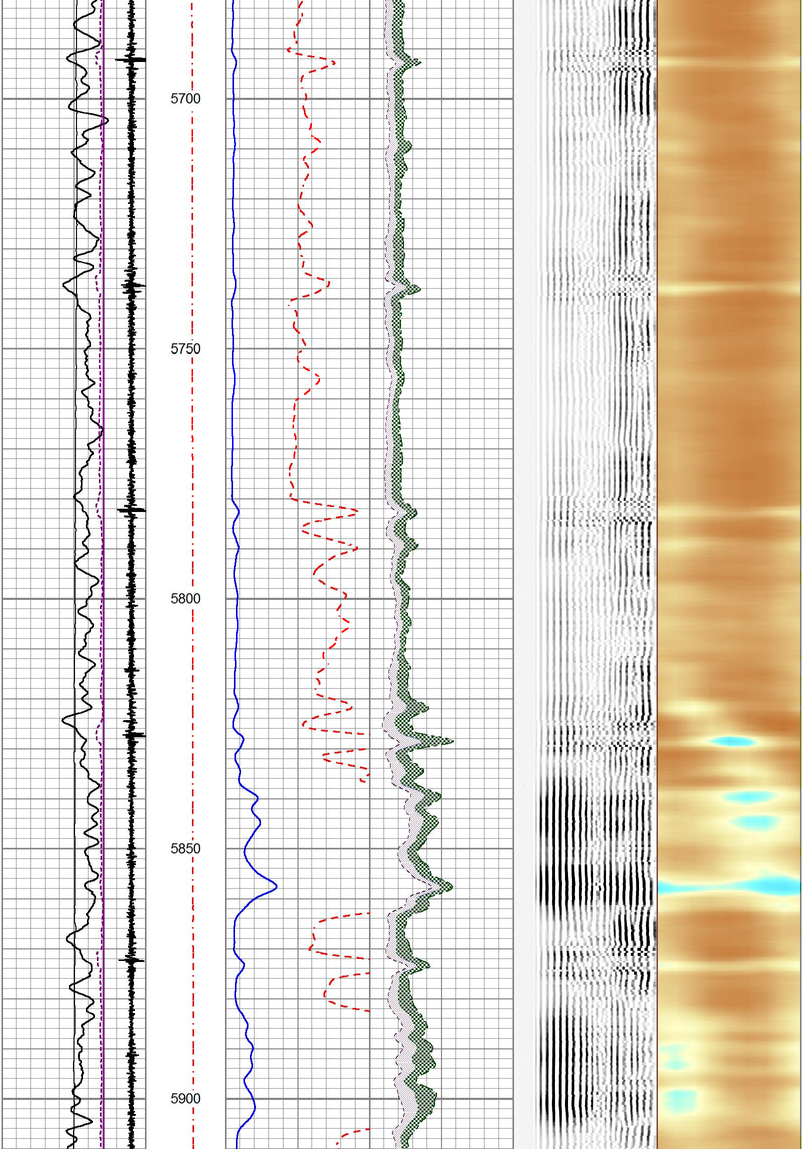
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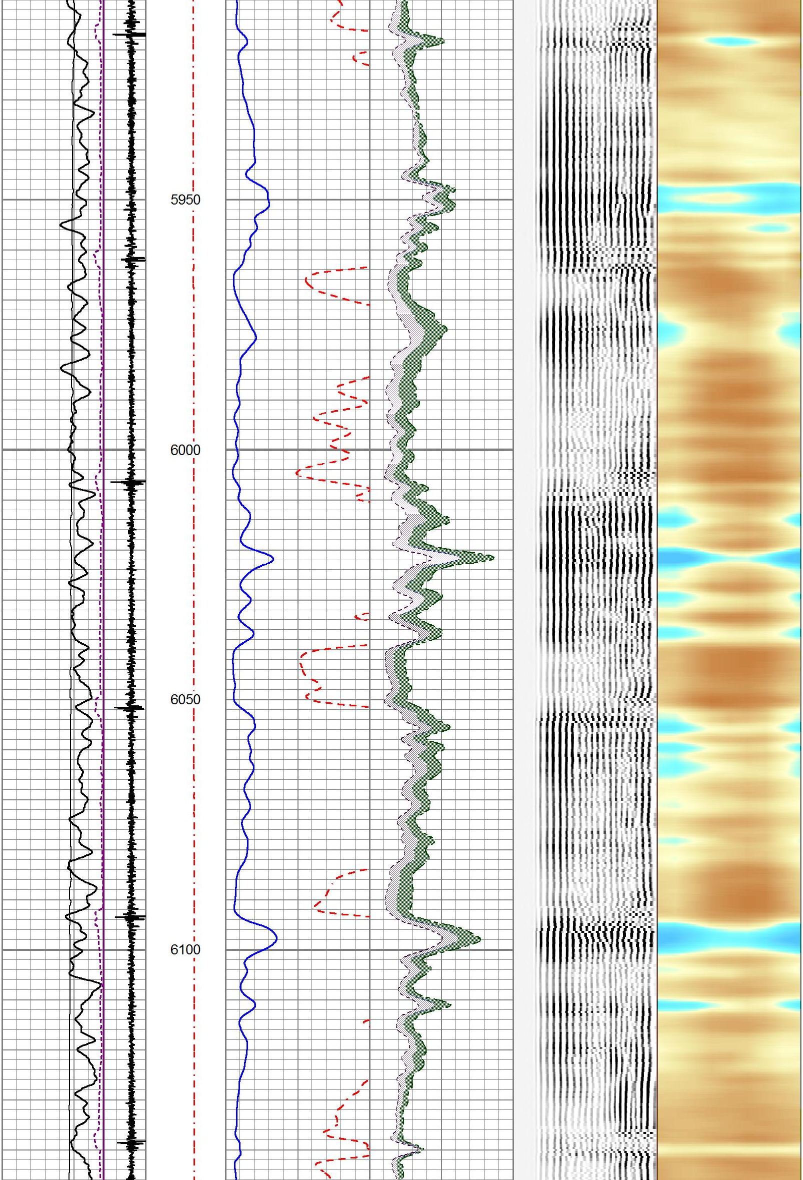
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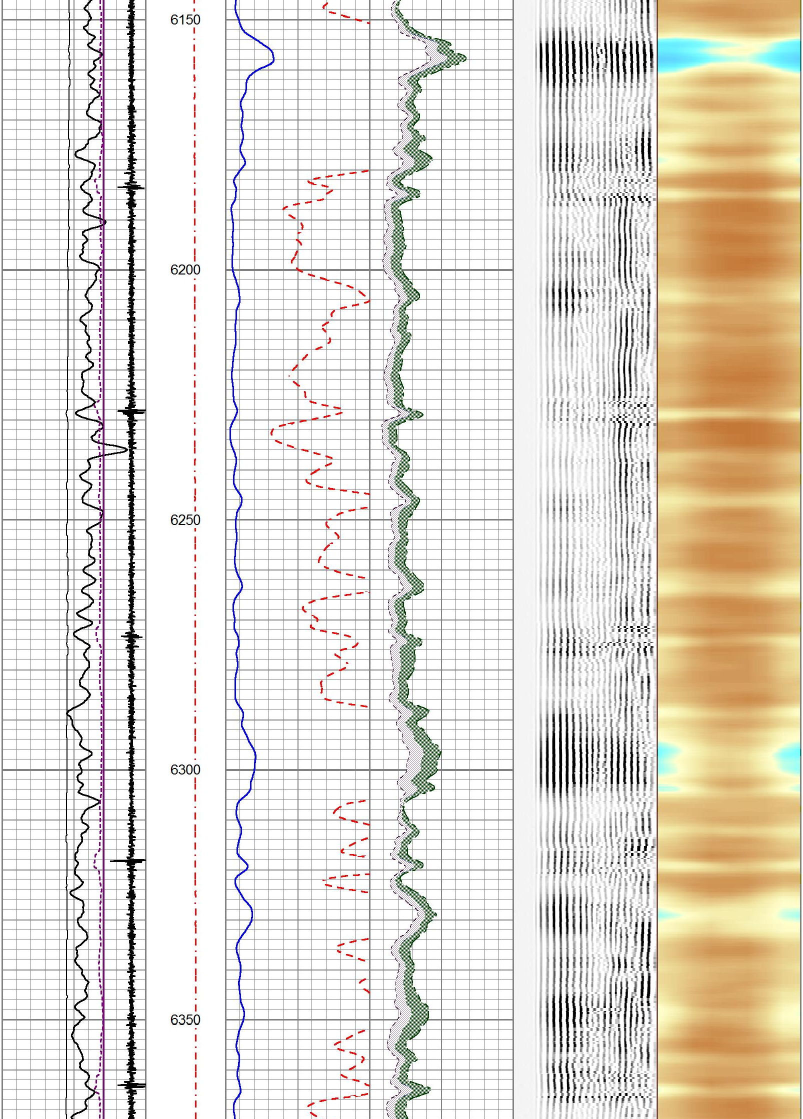
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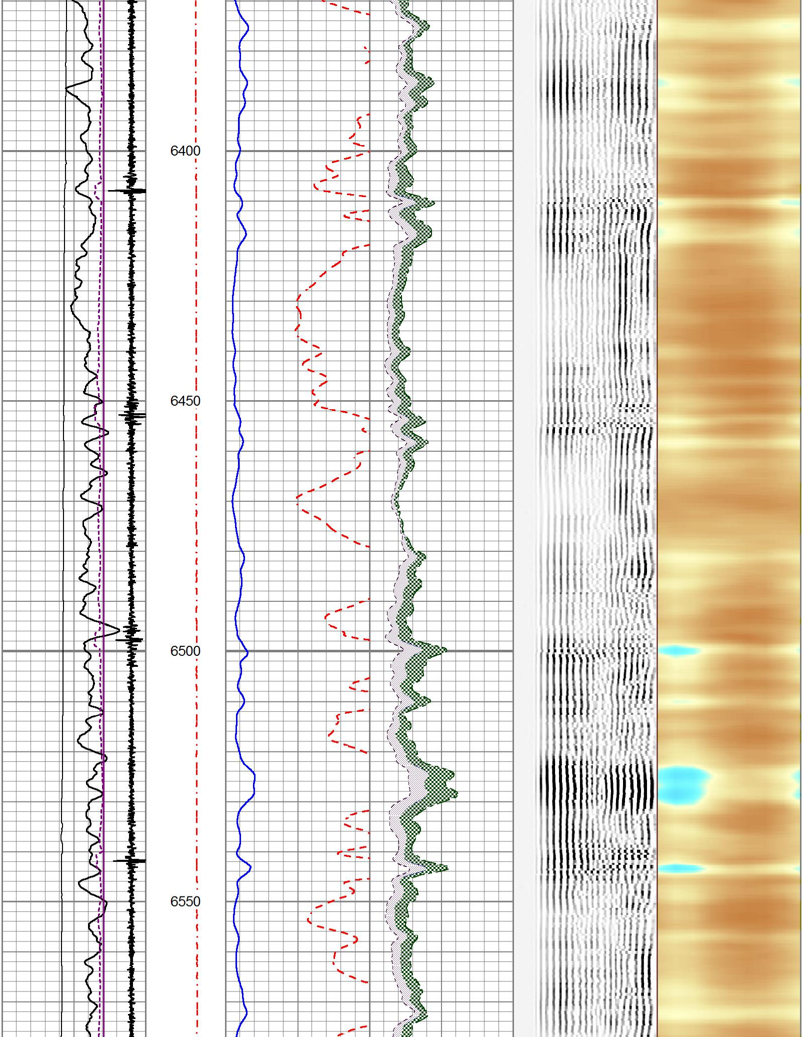
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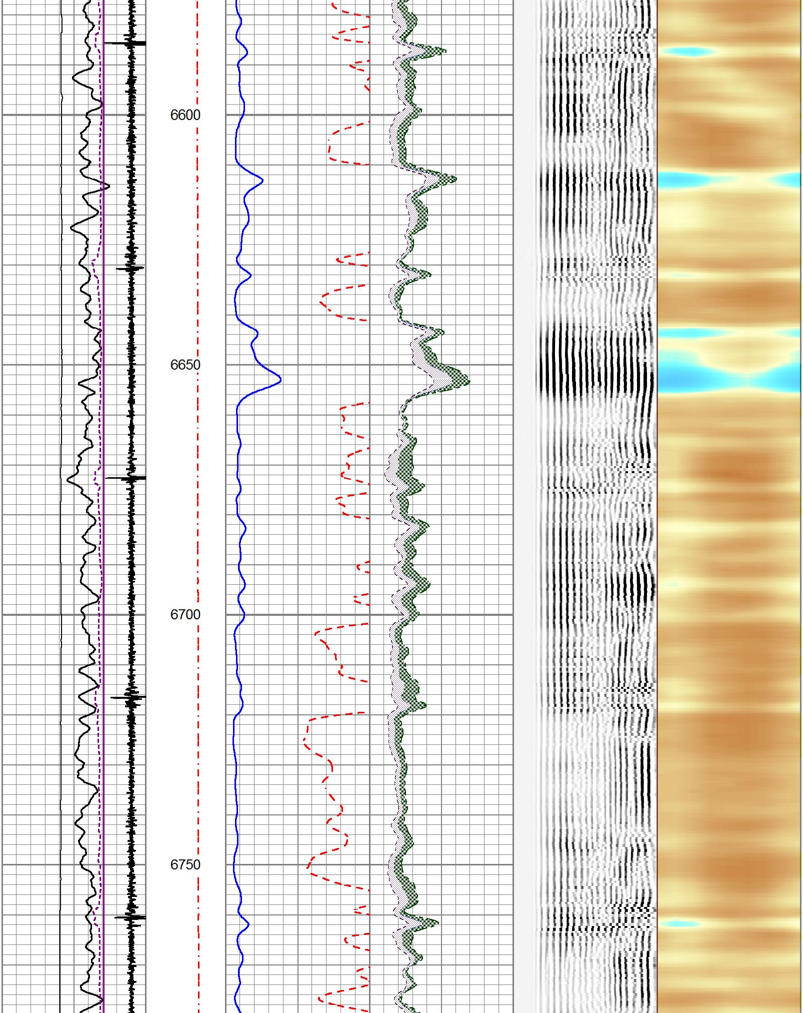
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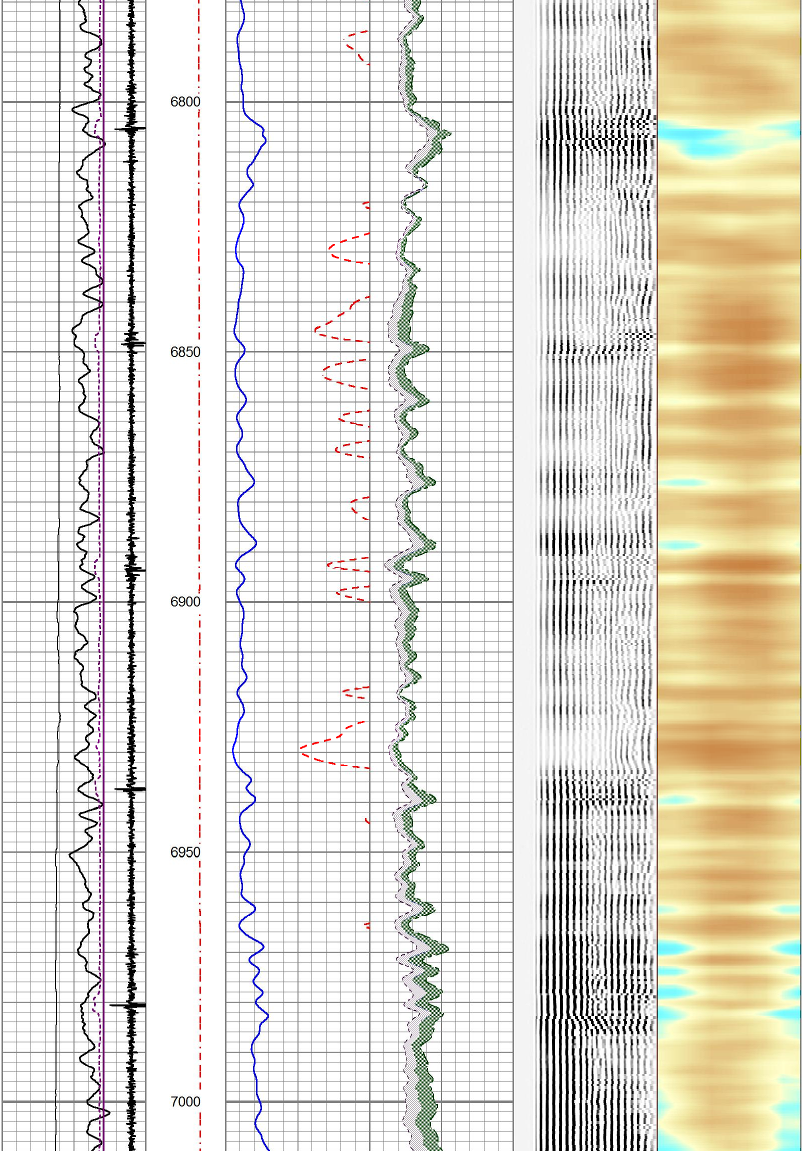
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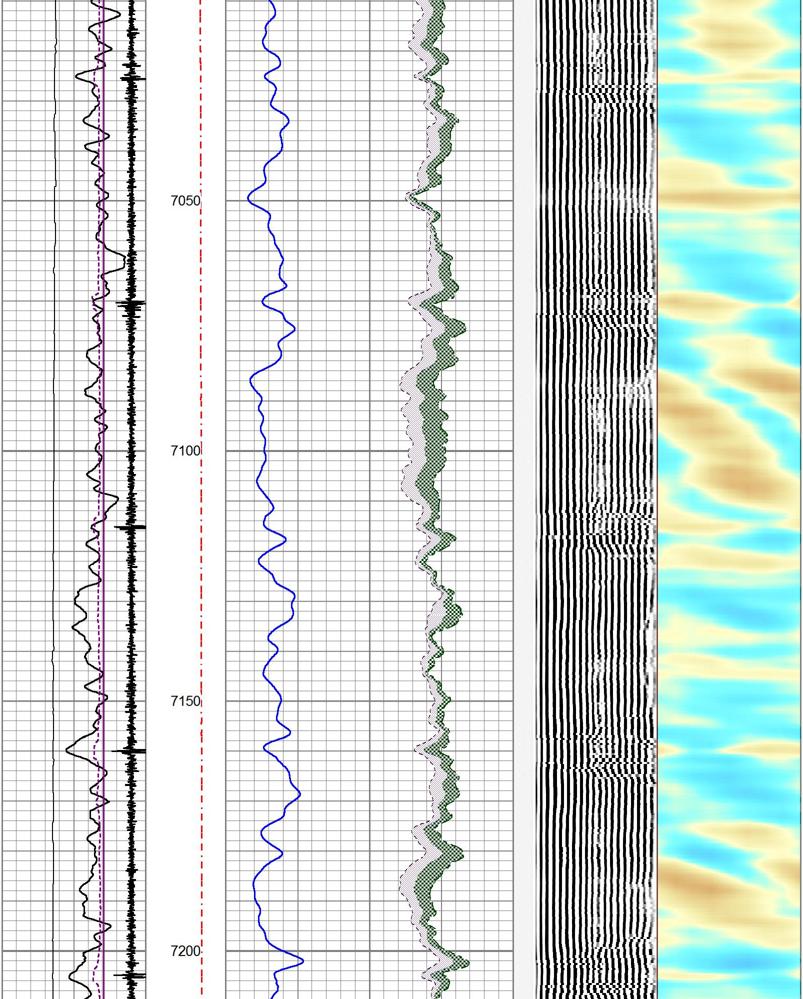
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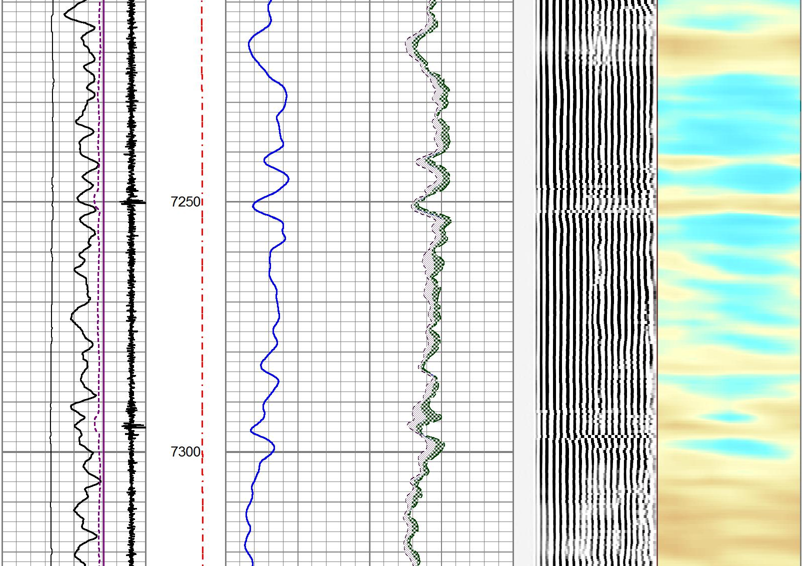
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CCL	np - Analog C	0 Amplitude (mV)100	AVG Sector Amplitude	Acoustic Waveform	SECTORS
Gamma 0 (GAPI) 200	(degF) 0 300	Amplitude x10 0 (mV) 10	0 100	200 (usec) 1200	0 72
300(Line Tens (lb) 0			MAX Sector Amplitude 0 100		
Predicted TT			MIN Sector Amplitude 0 100		
TT +[10 usec]-					

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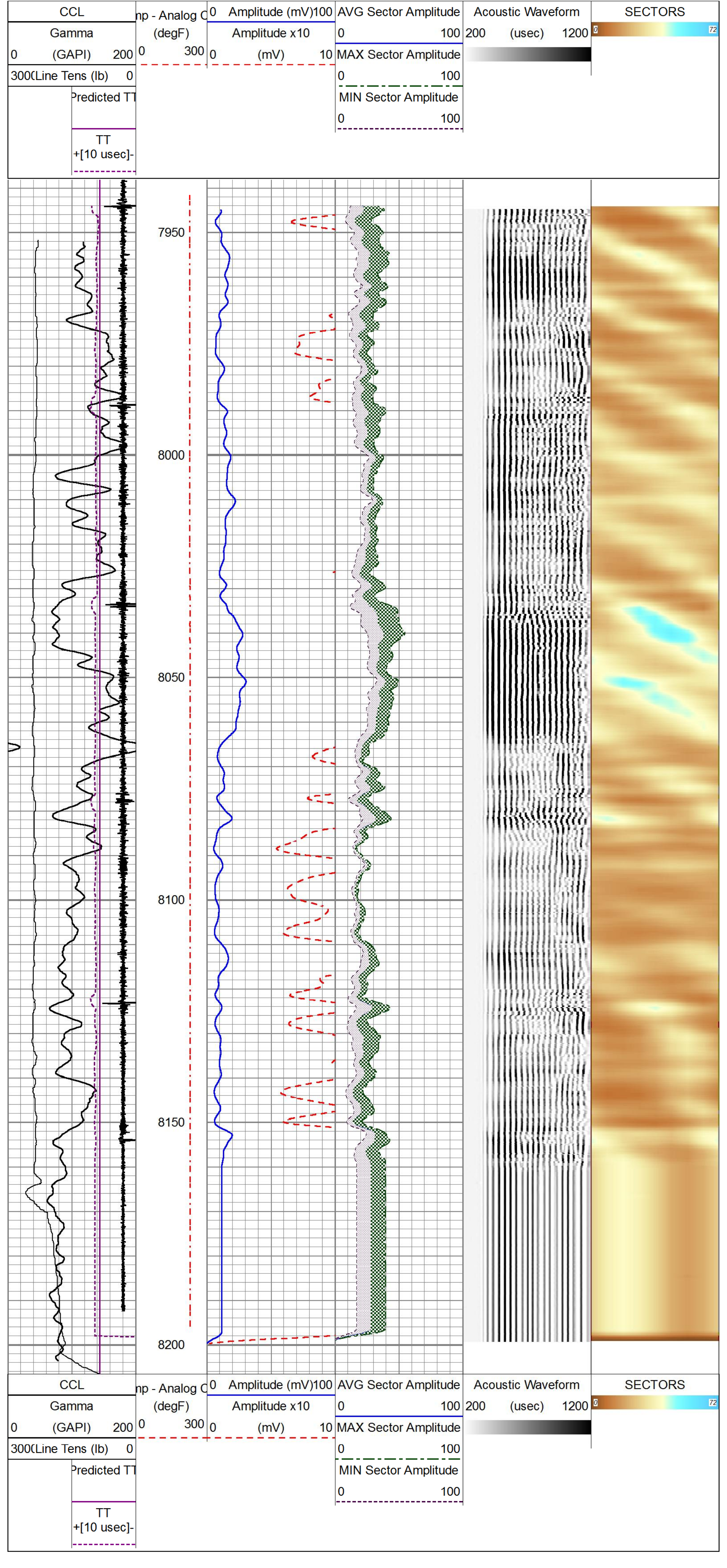
REPEAT PASS - Ran with 0 PSI

5 in / 100 ft

Database File	20190110_extraction_duck club 12w-20-5c_cbl\20190110_extraction_duck club 12w-20-5c_cbl.db
Dataset Pathname	pass2
Presentation Format	rcbl_8s
Dataset Creation	Thu Jan 10 17:26:15 2019
Charted by	Depth in Feet scaled 1:240

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



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

Calibration Report

Database File	d:\warrior\data\20190110_extraction_duck club 12w-20-5c_cbl\20190110_extraction_duck club 12w-20-5c_c
Dataset Pathname	pass3
Dataset Creation	Thu Jan 10 17:30:57 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):

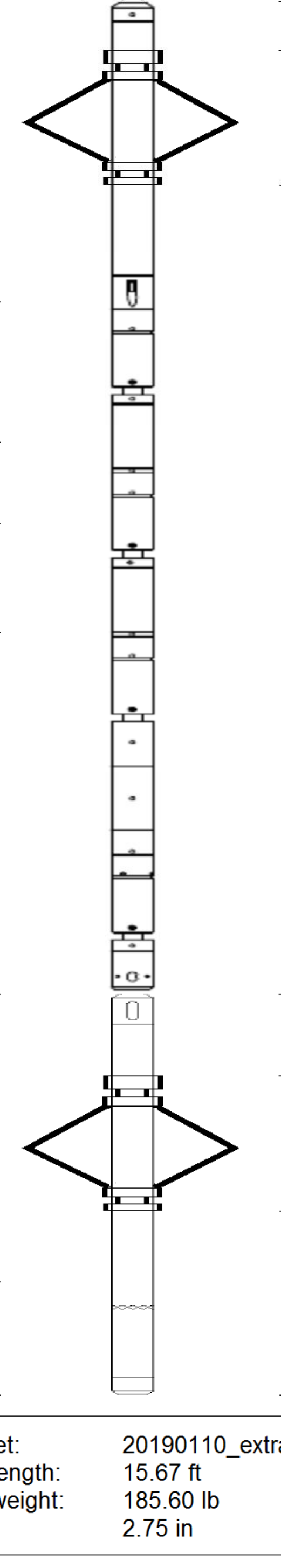
	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.004	0.749	1.000	0.000

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			

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
			CableHead-TitanConeType2	1.03	1.44	3.60
CCL	13.50		CCL_Log-2 3/4" TekCo (IPSN7-03)	1.83	2.75	33.00
			Antelope-Overbody	1.25	2.75	
TEMP	10.05					
WVFS8	8.76					
WVFS7	8.76					
WVFS6	8.76		RBTA-2 3/4" RIB Analog (ISF06-04)	9.13	2.75	102.00
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					
			Antelope-Overbody	1.25	2.75	
			GR_Log-2 3/4" TekCo (ISHV2-02)	3.68	2.75	47.00
GR	1.04					
LOCTIM	0.00					
UTCTIM	0.00					
PMON	0.00					

Dataset:	20190110_extraction_duck club 12w-20-5c_cbl.db: field/well/run1/pass3
Total length:	15.67 ft
Total weight:	185.60 lb
O.D.:	2.75 in

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Company	Extraction Oil and Gas, Inc.		
Well	12W-20-5C		
Field	Wattenberg		
County	Adams		
State	Colorado	**Country**	U.S.A.