RELIANCE
OILFIELD SERVICES

Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Federal RWF 443-11
Field	Rulison
County	Garfield
State	Colorado

Company TEP Rocky Mountain LLC
Well Federal RWF 443-11
Field Rulison
County Garfield State Colorado
Location: API # : 05-045-24281
SEC 12 TWP 6S RGE 94W

Other Services
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				Elevation
Permanent Datum	Ground Level	Elevation	5466.8'	K.B. 5490.8'
Log Measured From	Kelly Bushing	24 FT		D.F. 5489.8'
Drilling Measured From	Kelly Bushing			G.L. 5466.8'

Date	30-JAN-2020
Run Number	One
Depth Driller	9216 FT
Depth Logger	9172 FT
Bottom Logged Interval	9160 FT
Top Log Interval	Surface
Open Hole Size	8.750"
Type Fluid	Fresh Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	239°F
Estimated Cement Top	See Log
Time Well Ready	ROA
Time Logger on Bottom	18:10
Equipment Number	HD-359
Location	Grand Junction, CO
Recorded By	James Donnelly
Witnessed By	D. Welsh

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size (in)	Wgt (lbs/Ft)	Grade	Top	Bottom
Surface Casing	9 5/8	36	J-55	Surface	1041 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	9175 FT
Intermediate #2					
Liner					

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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.

Comments

Log ran as per customer request
Depth referenced to Kelly Bushing at 24 FT
Marker Joint logged at 5160 - 5181 FT
Recorded with 0 PSI Surface Induced Pressure

Thank you for choosing Reliance Oilfield Services, LLC!!

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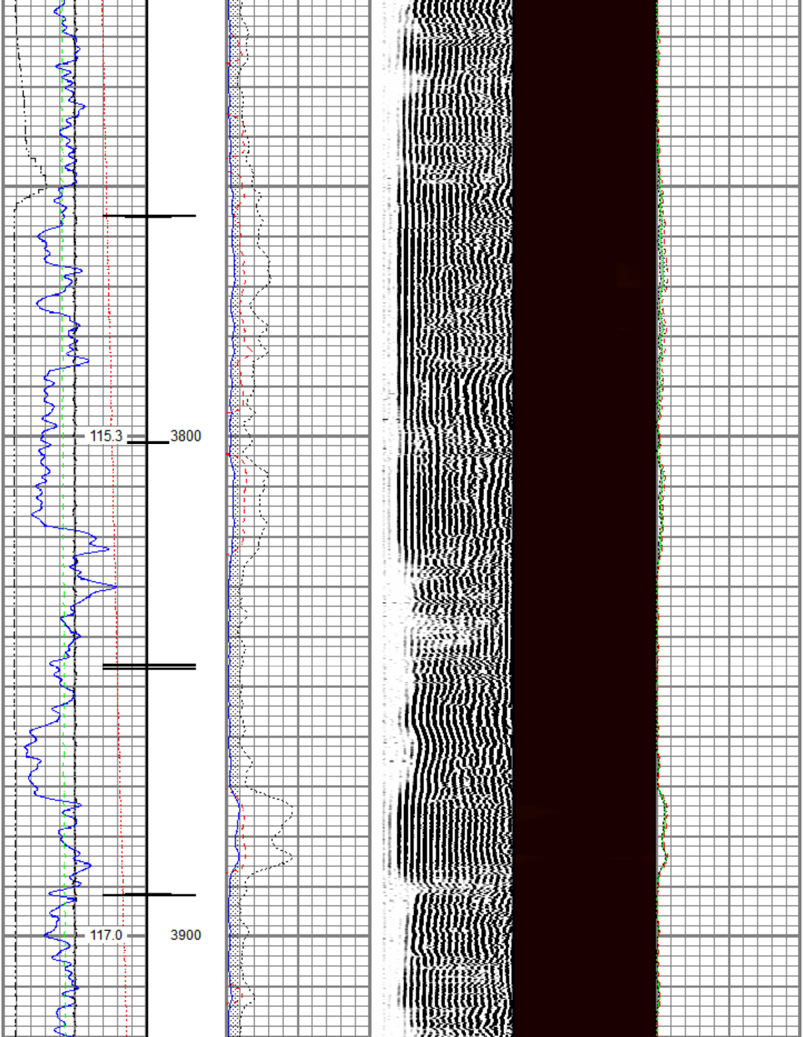
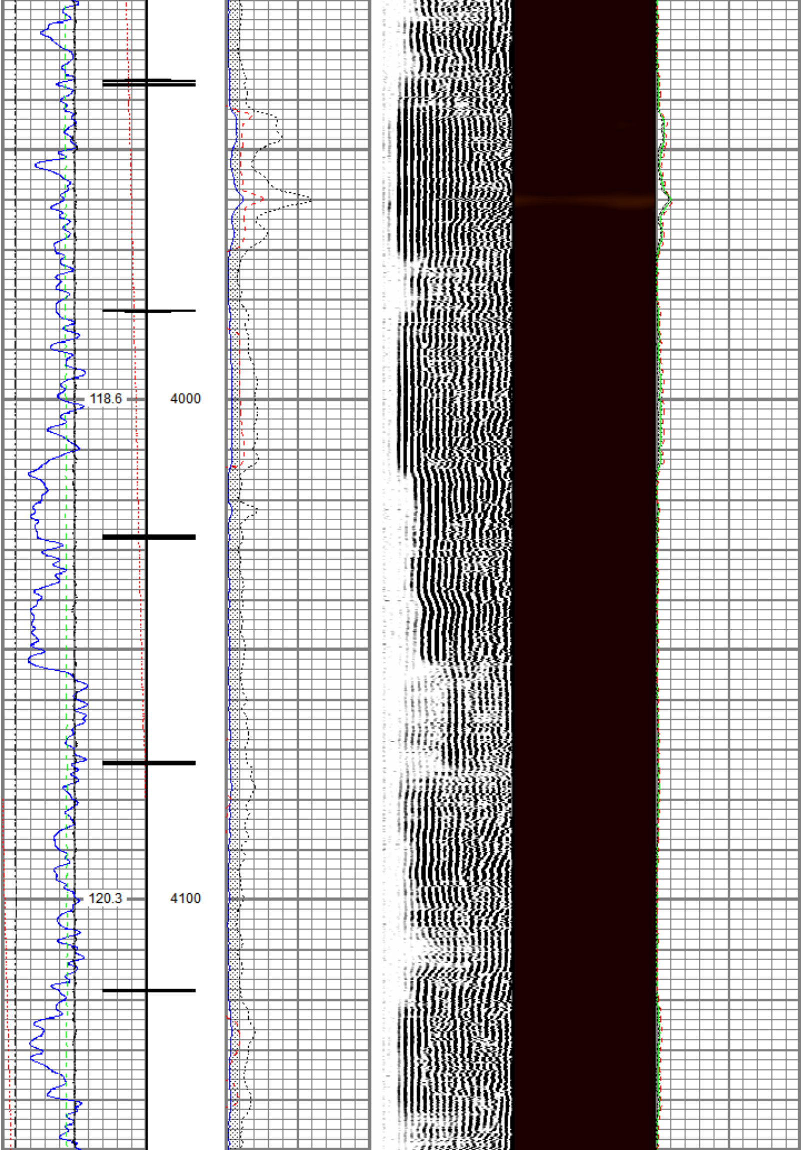
Main Pass

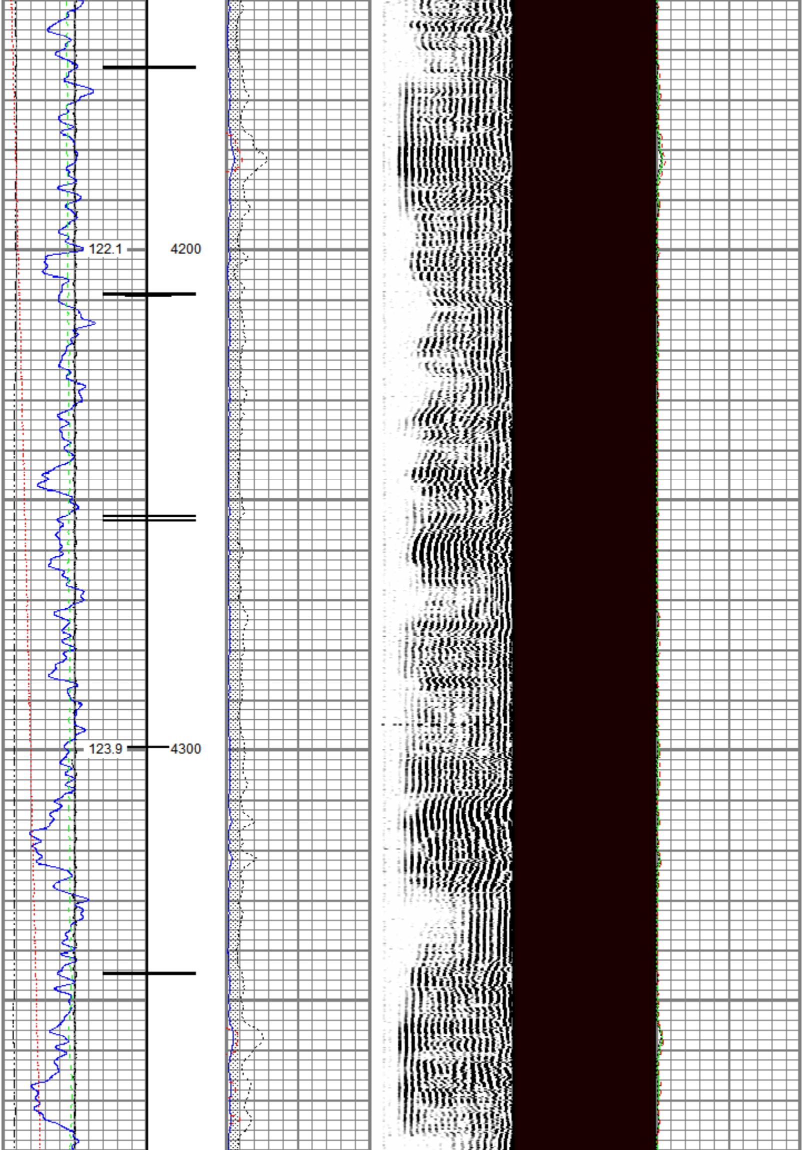
Recorded With 0 PSI Surface Induced Pressure

Database File	tep\tep_federal rwf 443-11_rbl_01-30-20\processed_tep_federal rwf 443-11_rbl_01-30-20.db
Dataset Pathname	Main.4
Presentation Format	ros_radii_tep
Dataset Creation	Fri Jan 31 14:39:37 2020
Charted by	Depth in Feet scaled 1:240

Track 1	Track 2	Track 3	Track 4	Track 5
Gamma Ray 0 (GAPI) 200	3' Amplitude 0 (mV) 100	5' Variable Density Log 200 (usec) 1200	Sector Map	Average Amplitude 0 150
Line Speed -150 (ft/min) 150	3' Amplitude x 5 0 (mV) 20			Mimimum Amplitude 0 150
Line Tension 0 (lb) 2000	3' Travel Time 300 (usec) 200			Maximum Amplitude 0 150
Differential Temperature -2 (degF) 2				
Temperature 0 (degF) 20				
Casing Collar Locator				


115.3
3800
117.0
3900


118.6
4000
120.3
4100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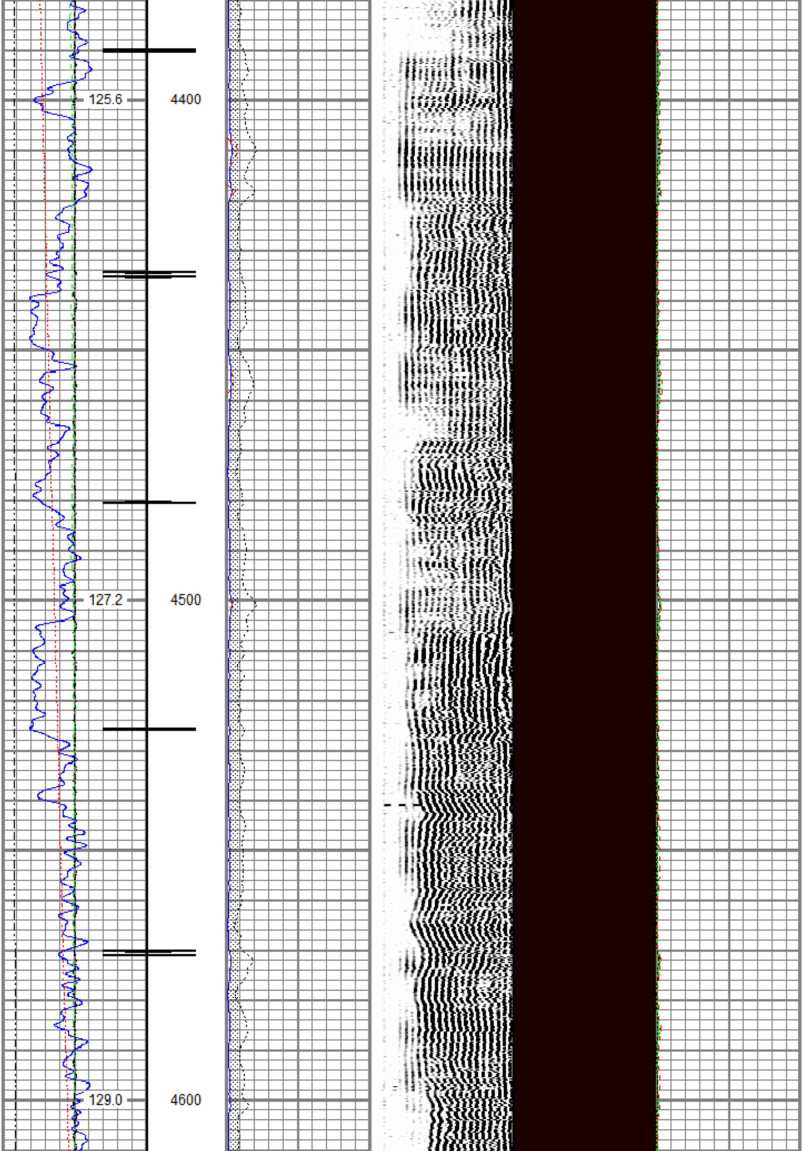
4200
123.9
4300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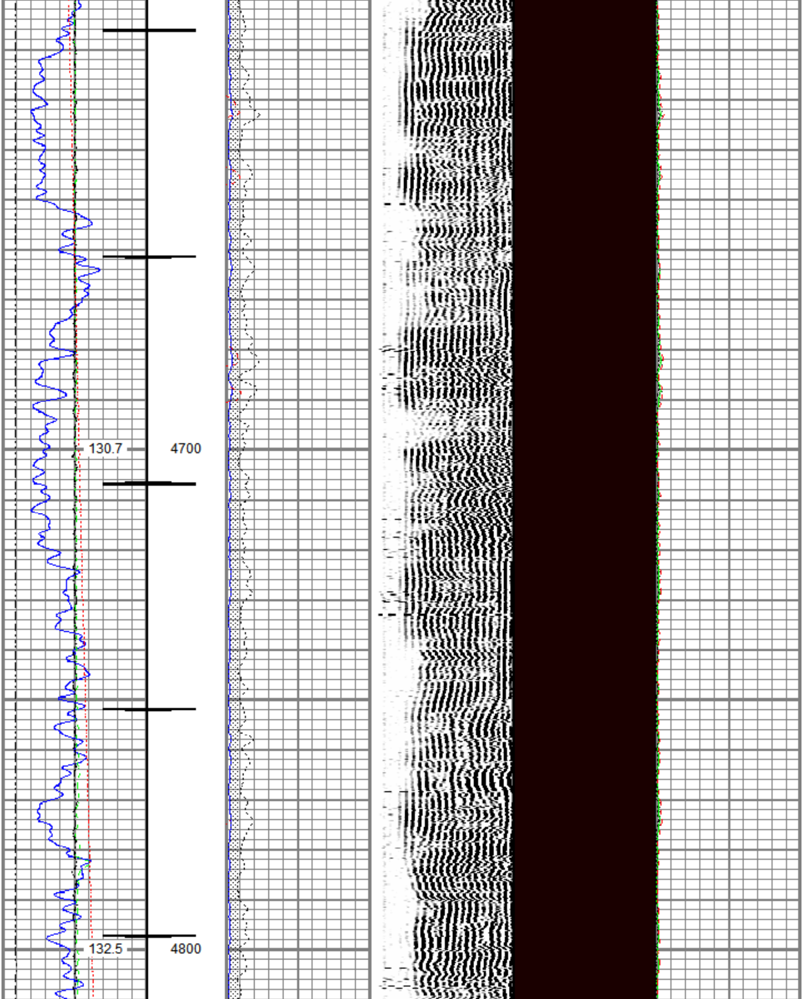
4400
127.2
4500
129.0
4600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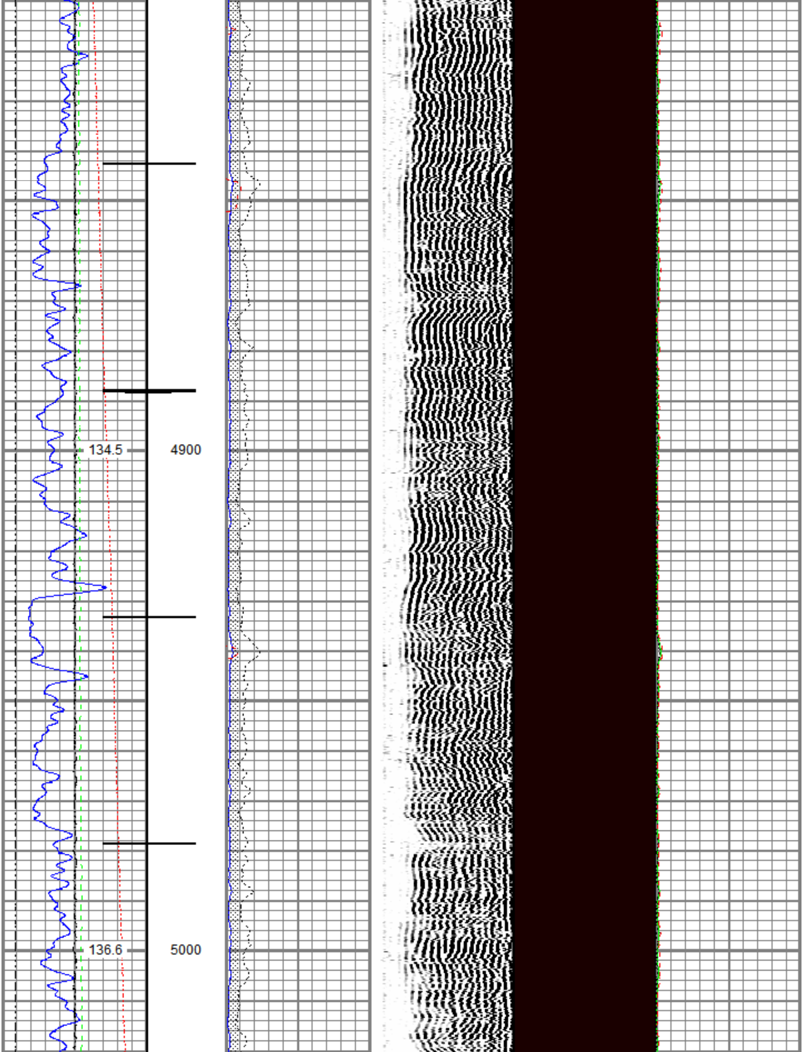
4700
132.5
4800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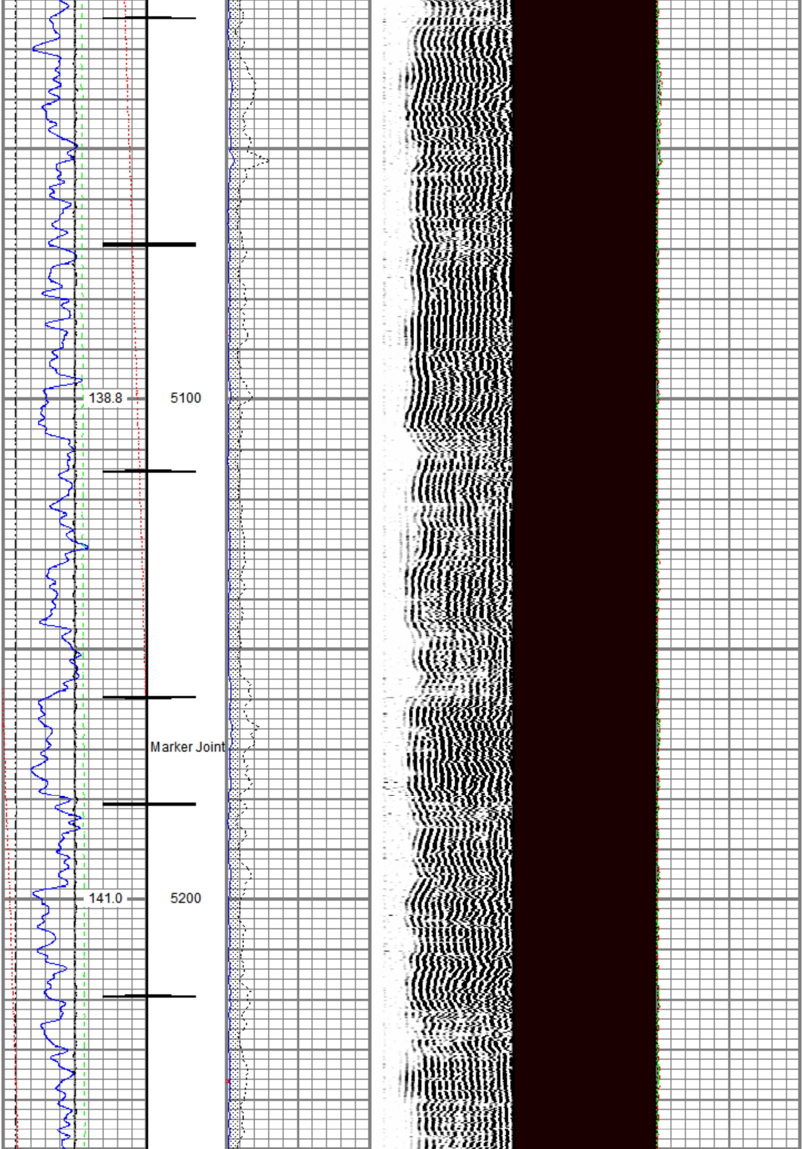
4900
136.6
5000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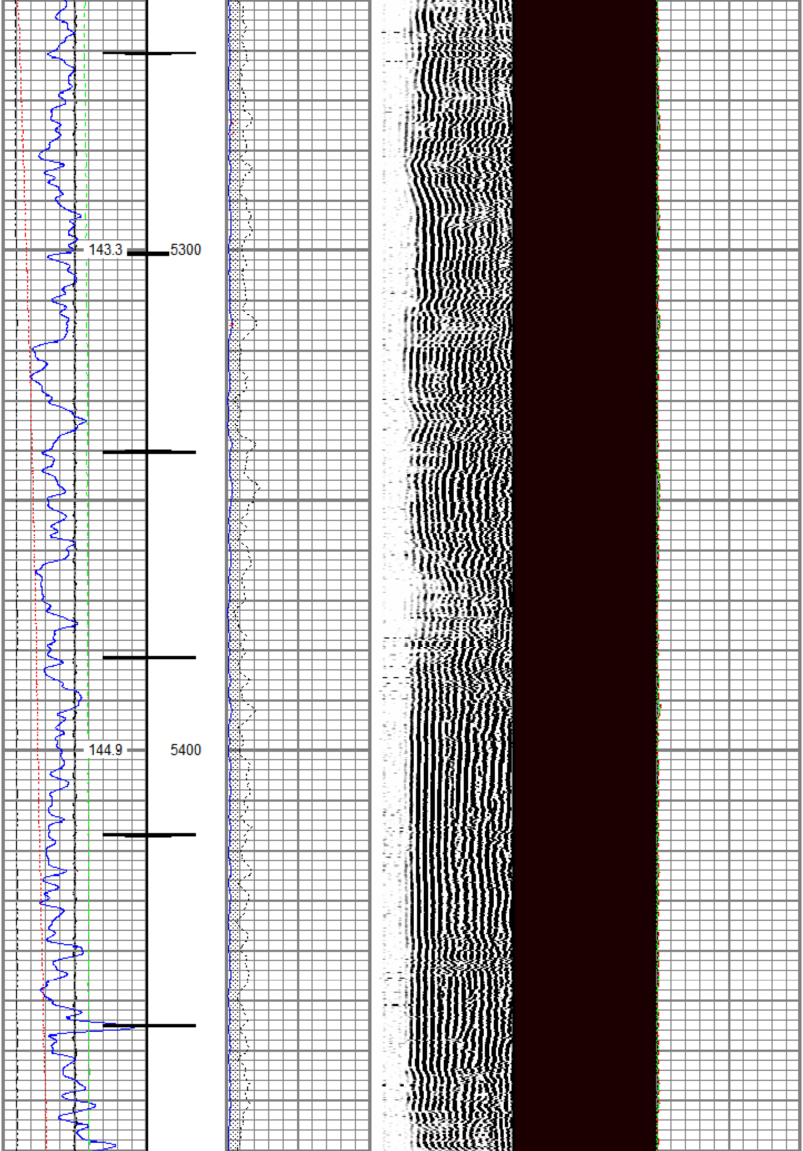
5100
Marker Joint
141.0
5200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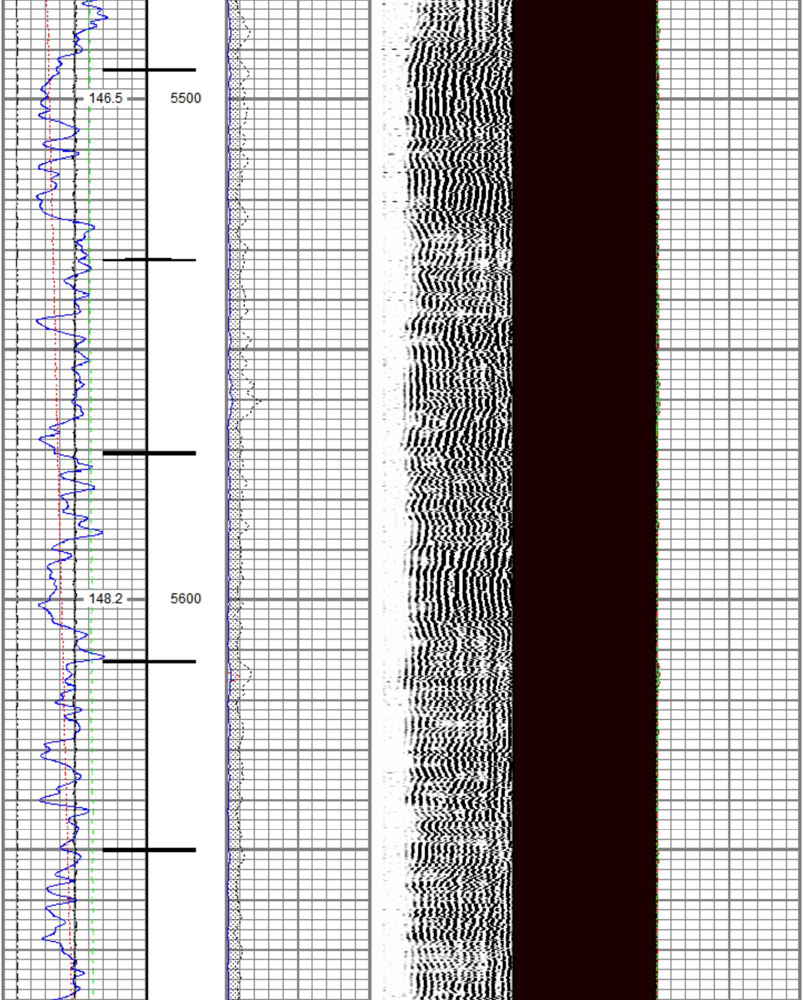
144.9
5400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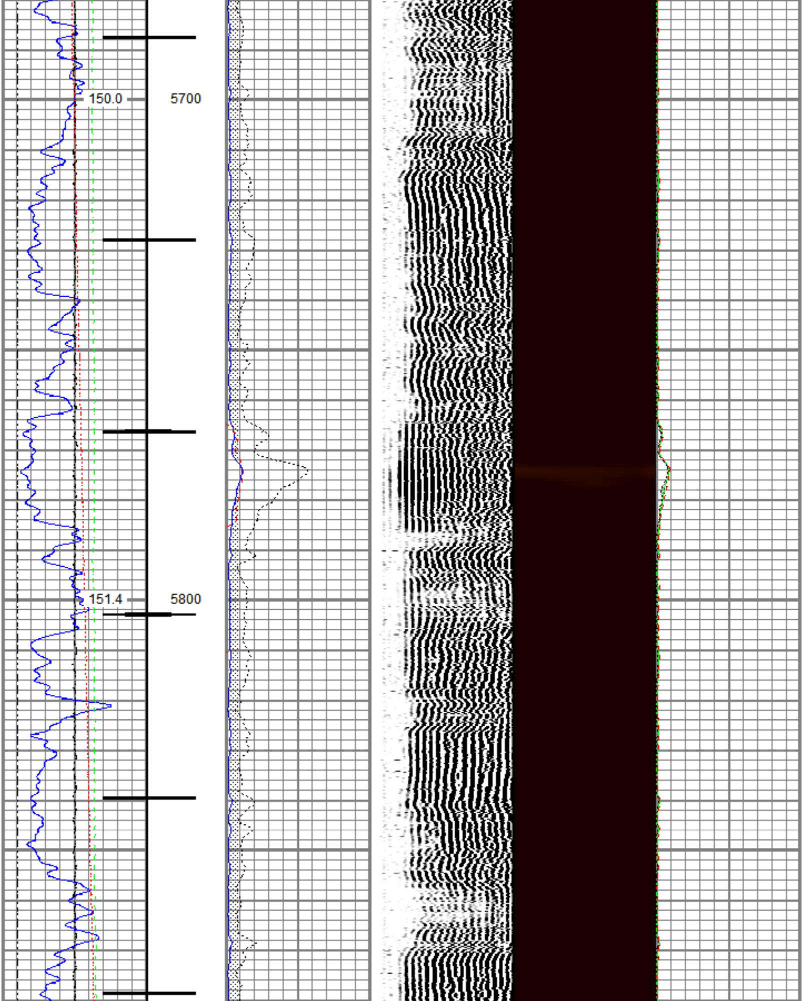
5600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151.4
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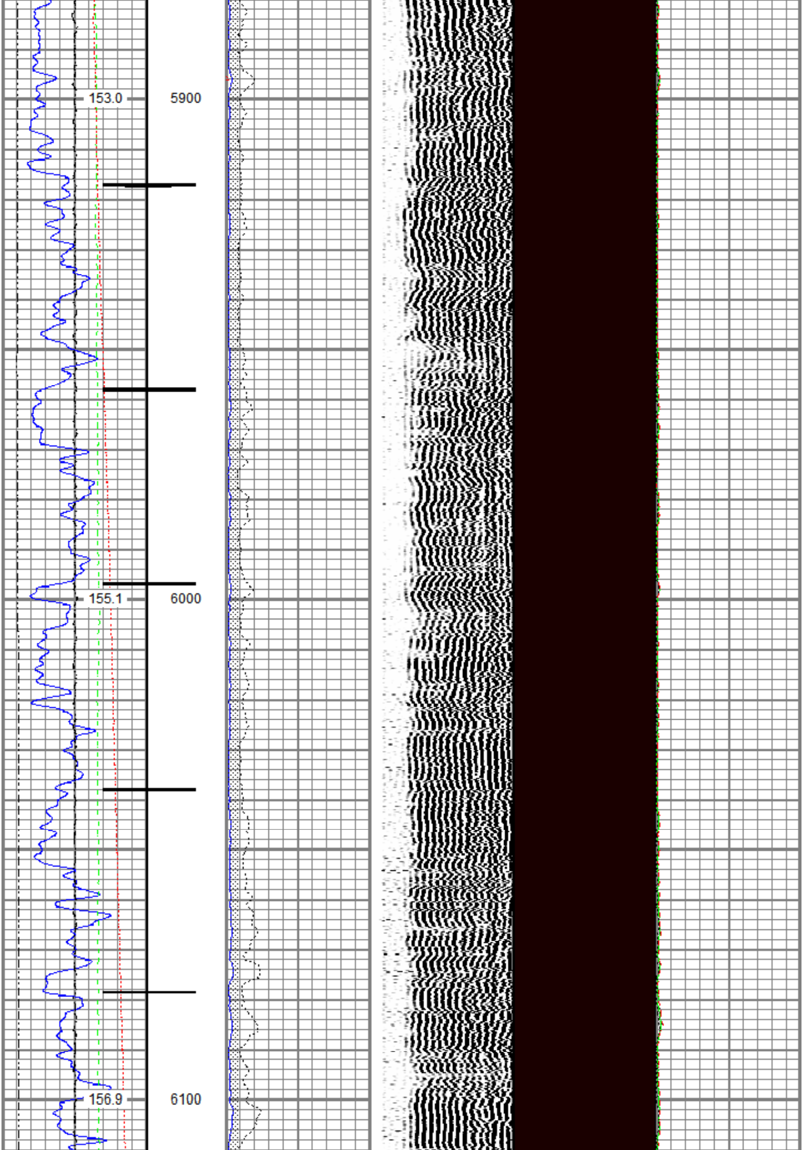
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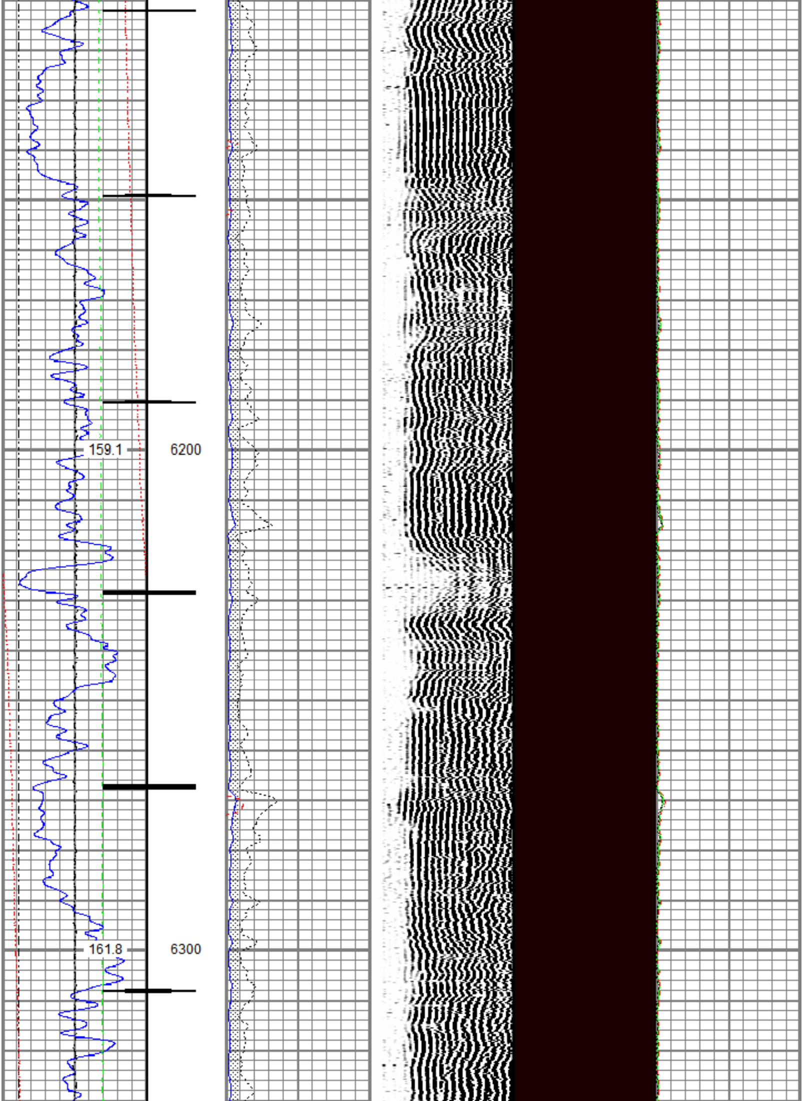
5900
155.1
6000
156.9
6100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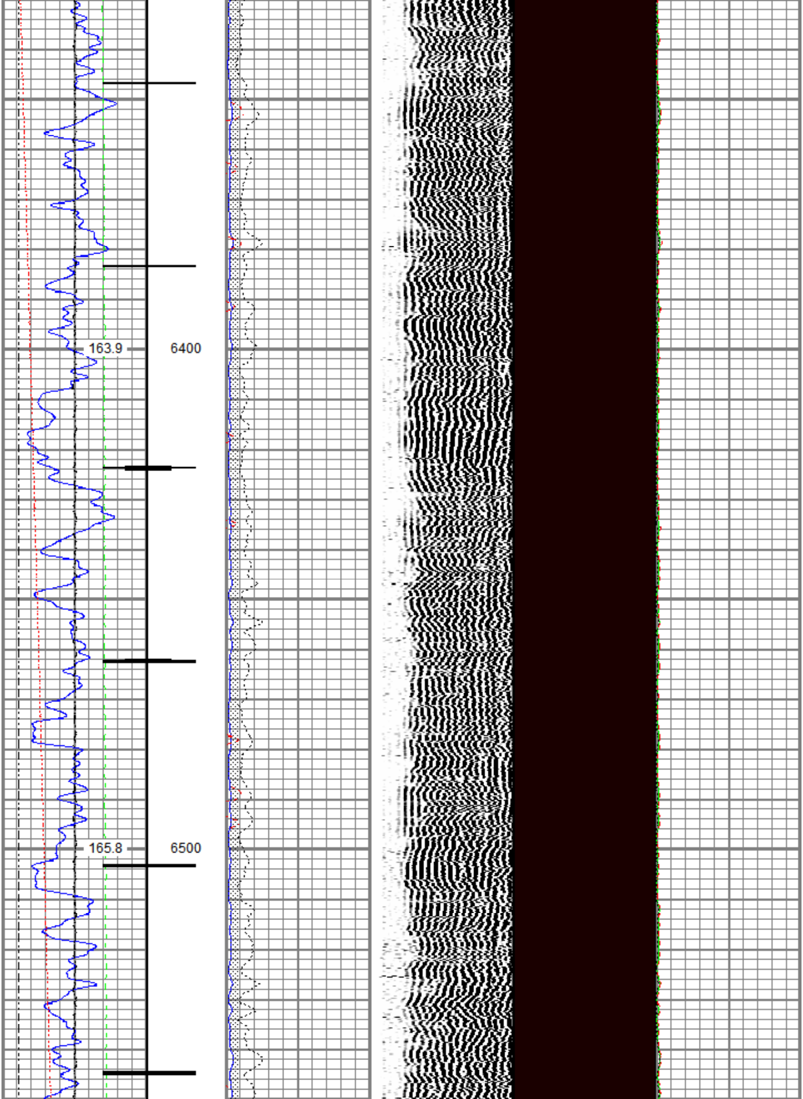
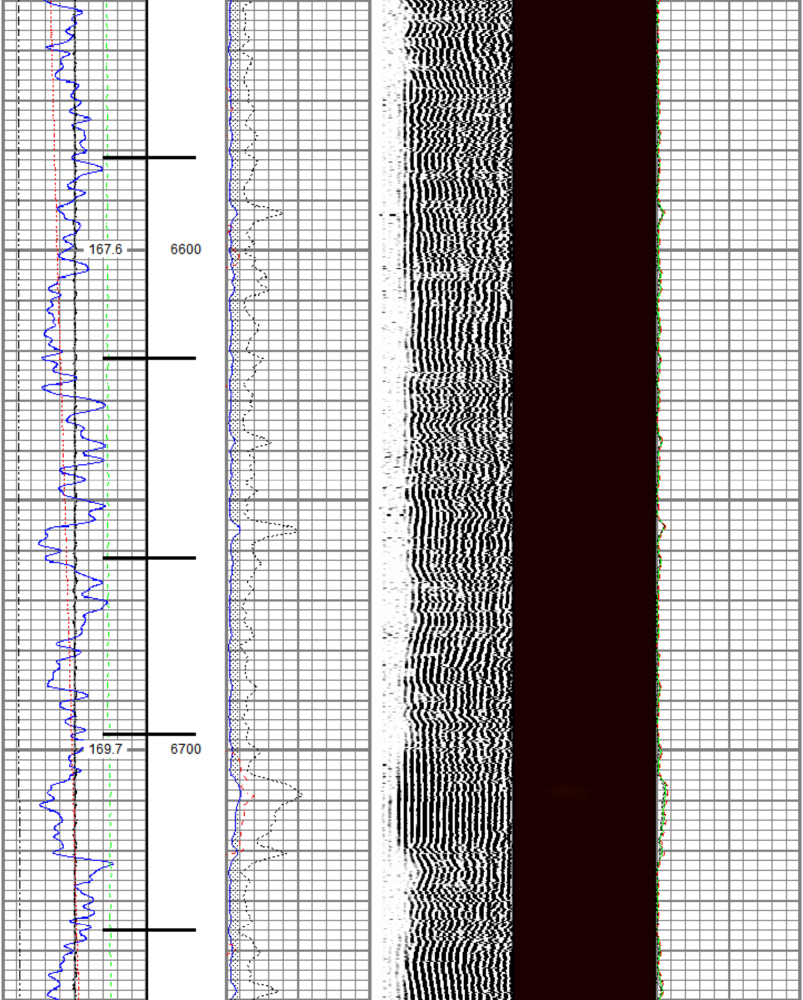
6200
161.8
6300


163.9
6400
165.8
6500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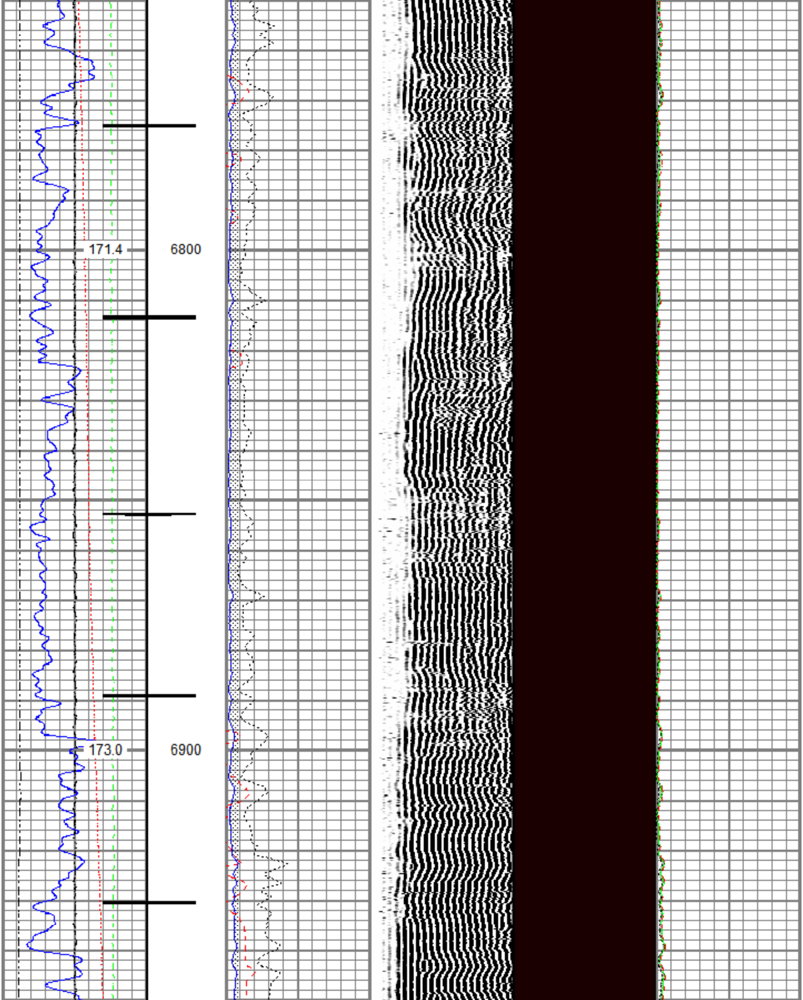
6600
169.7
6700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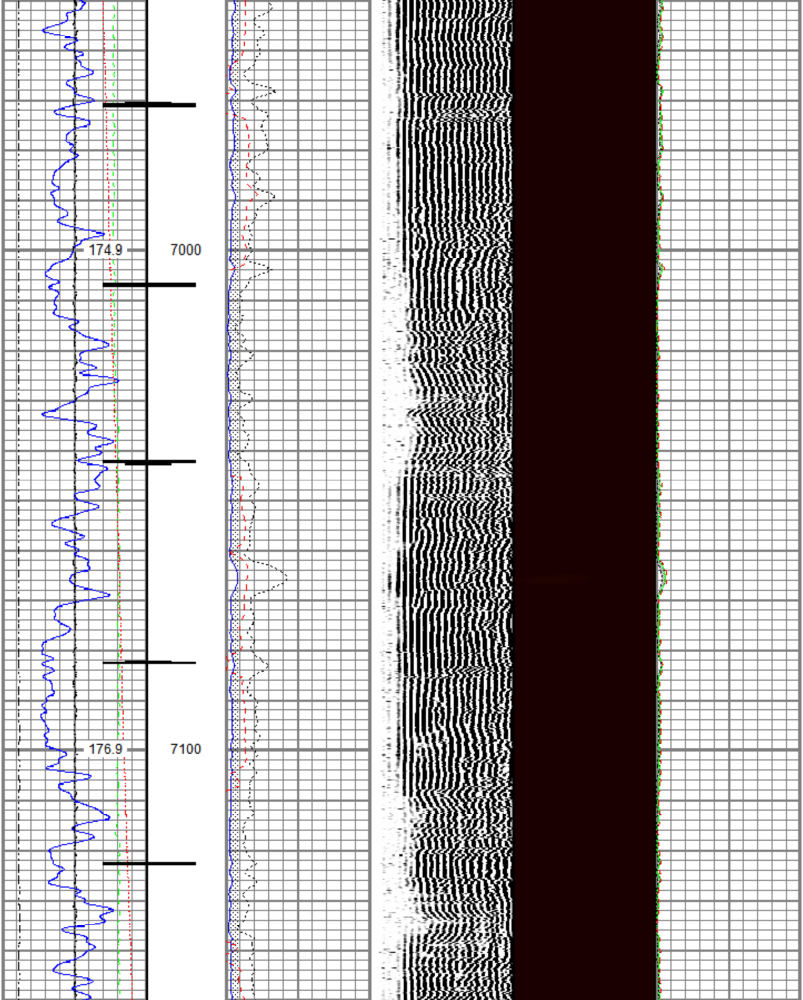
6800
173.0
6900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7000
176.9
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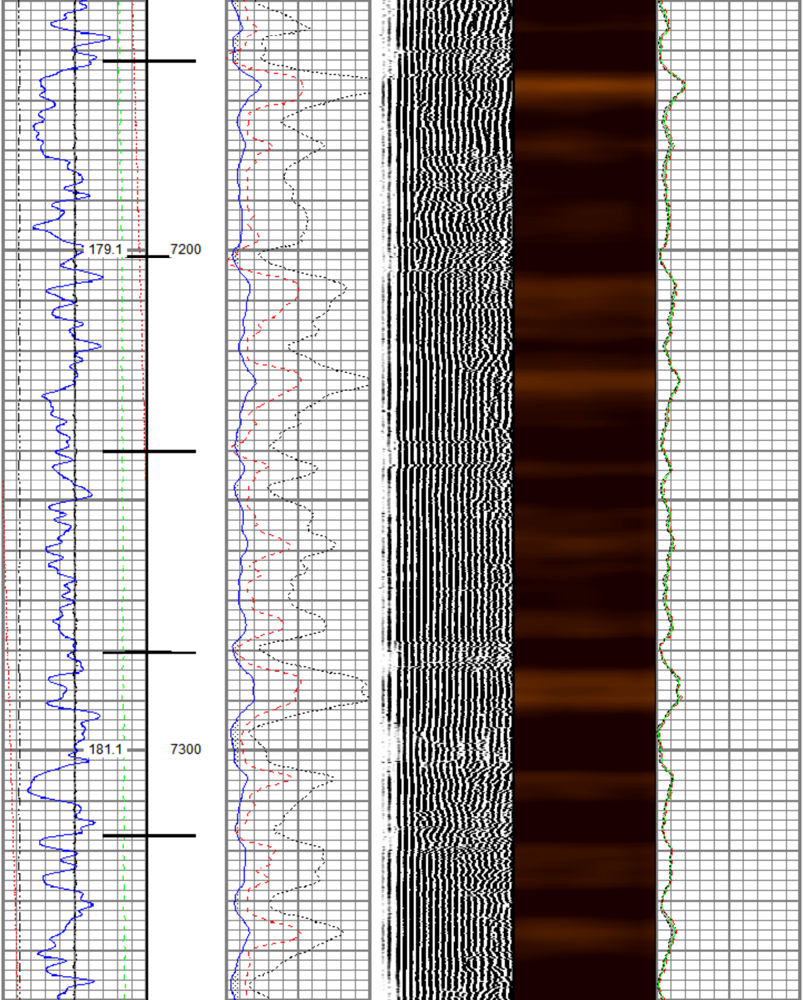
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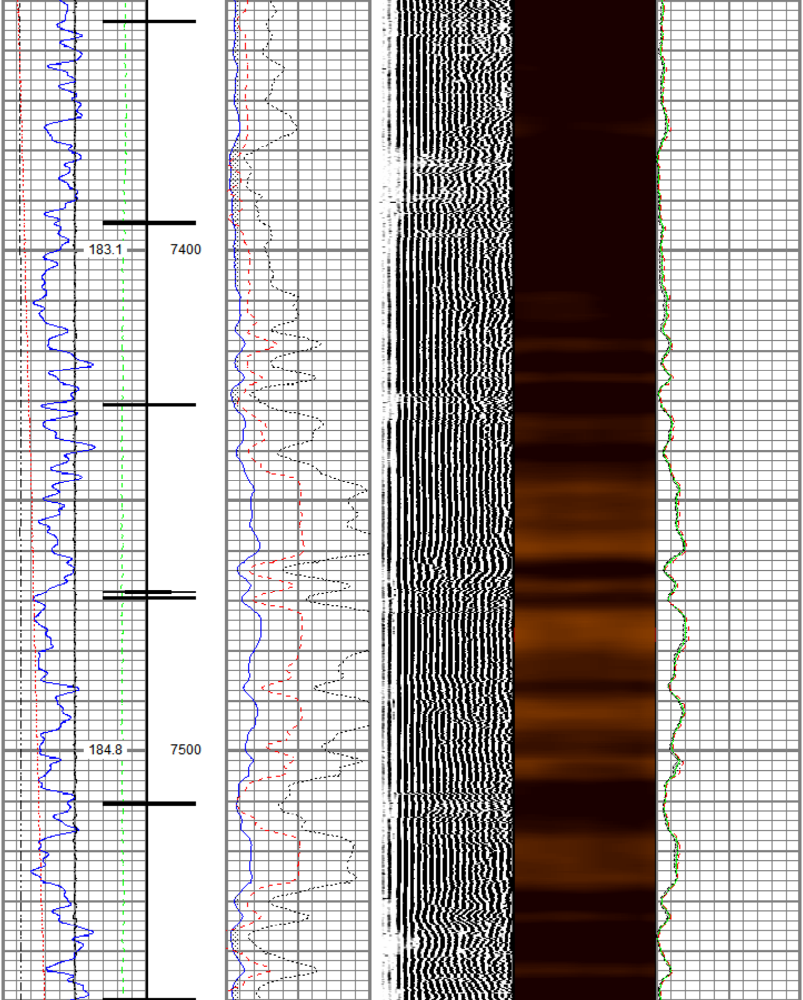
181.1
7300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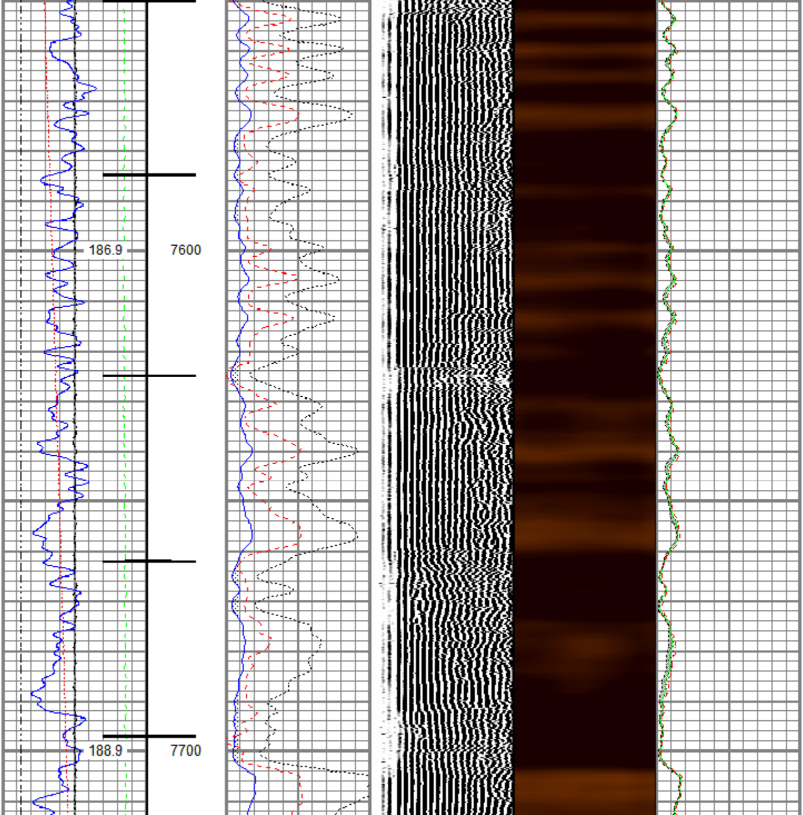
186.9
7600
188.9
7700

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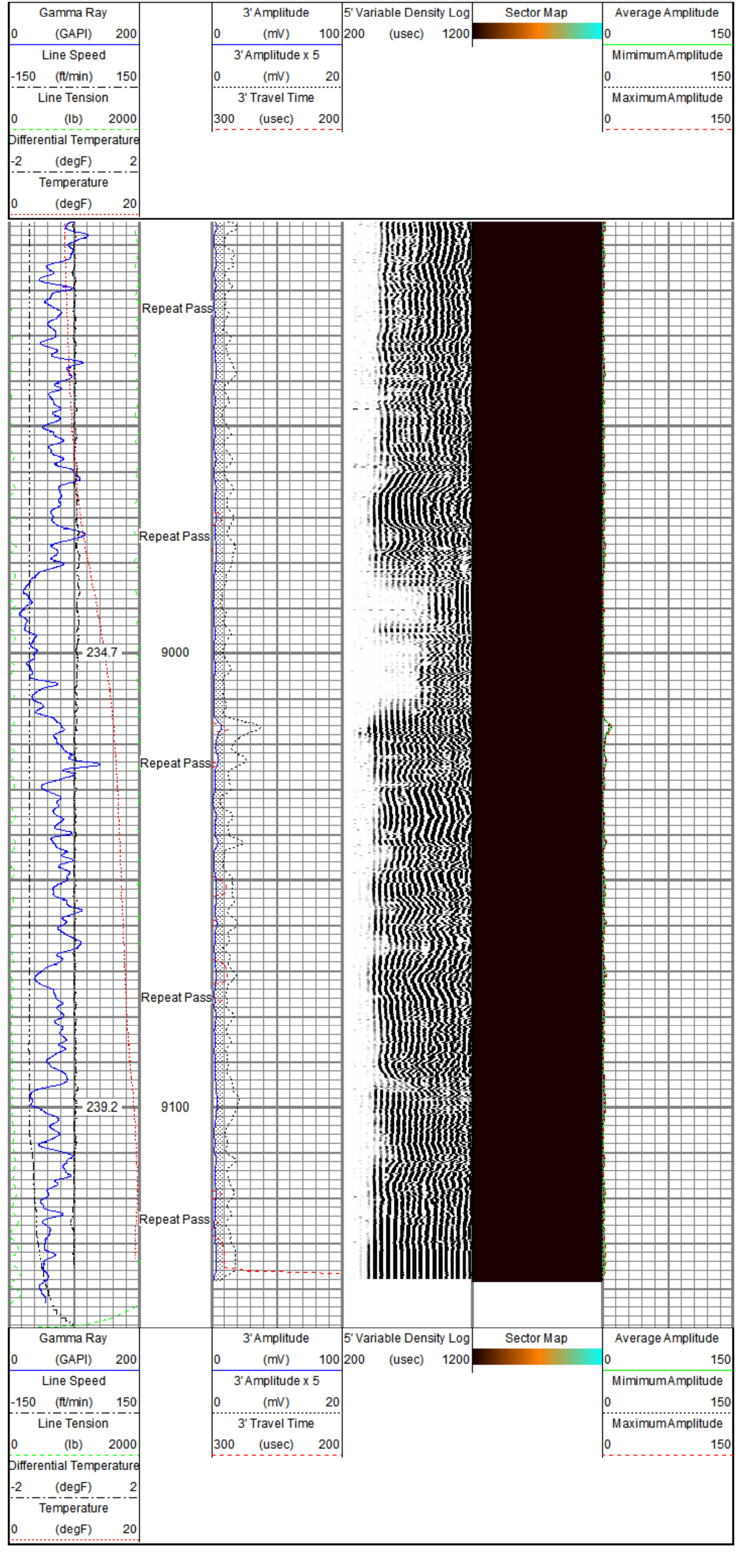
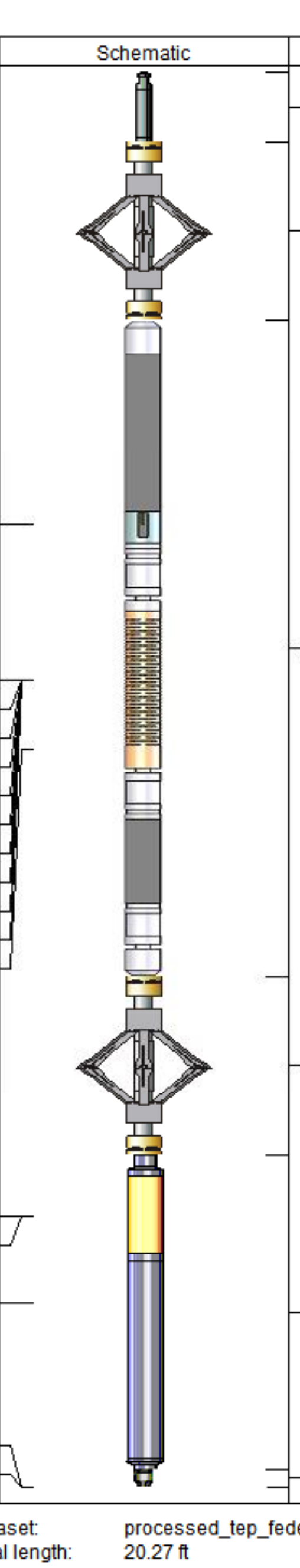
Repeat Pass

Recorded With 0 PSI Surface Induced Pressure

Database File	tep\tep_federal rwf 443-11_rbl_01-30-20\processed_tep_federal rwf 443-11_rbl_01-30-20.db
Dataset Pathname	Repeat1.2
Presentation Format	ros_radii_tep
Dataset Creation	Fri Jan 31 14:39:08 2020
Charted by	Depth in Feet scaled 1:240



Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Titan CHD-14375 GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	3.60
			DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer with GO Ends	2.55	2.75	32.00
TEMP	13.79					
			Probe Radii-2750 RBT (FW0712-020) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
WVFS8	11.55					
WVFS7	11.55					
WVFS6	11.55					
WVFS5	11.55					
WVFS4	11.55					
WVFS3	11.55					
WVFS2	11.55					
WVFS1	11.55					
WVFCAL	11.55					
WVF3FT	11.55					
WVF5FT	10.55					
			DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer with GO Ends	2.55	2.75	32.00
CCL$2	3.88					
CCL$1	3.88					
GR	2.63		Probe GR-CCL-2750 GOB (FW1307-038) Probe 2-3/4" rev.2 Digital Scintillation Gamma Ray/CCL Combined with GO Bottom	4.51	2.75	55.00
LOCTIM	0.00					
UTCTIM	0.00		GO BN-14375 GO 1-7/16" Bull Nose with Go Box Top	0.25	1.44	1.00

Dataset:	processed_tep_federal rwf 443-11_rbl_01-30-20.db: field/well/run1/Main.4
Total length:	20.27 ft
Total weight:	228.60 lb
O.D.:	2.75 in

Calibration Report

Database File	c:\programdata\warrior\data\tep\tep_federal rwf 443-11_rbl_01-30-20\processed_tep_federal rwf 443-11_rbl_
Dataset Pathname	Main.4
Dataset Creation	Fri Jan 31 14:39:37 2020

Gamma Ray Calibration Report

Serial Number:	FW1307-038	
Tool Model:	2750 GOB	
Performed:	Mon Oct 01 11:32:32 2018	
Calibrator Value:	637.0	GAPI
Background Reading:	113.2	cps
Calibrator Reading:	1022.4	cps
Sensitivity:	0.7007	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	FW0712-020	
Tool Model:	2750 RBT	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	30.236	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.005	0.824	0.800	81.196	96.961	1.286
CAL	-0.005	0.751				
5'	-0.002	0.679	0.800	81.196	118.004	1.023
SUM						
S1	-0.006	0.872	0.000	100.000	114.004	0.642
S2	-0.002	0.843	0.000	100.000	118.291	0.289
S3	-0.002	0.838	0.000	100.000	119.006	0.252
S4	-0.004	0.842	0.000	100.000	118.193	0.445
S5	-0.004	0.834	0.000	100.000	119.325	0.496
S6	0.002	0.815	0.000	100.000	122.901	-0.193
S7	0.001	0.815	0.000	100.000	122.807	-0.104
S8	0.009	0.818	0.000	100.000	123.582	-1.151

Air Zero Calibration, performed Thu Jan 30 17:10:55 2020:

	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:	FW0712-020	
Tool Model:	2750 RBT	
Performed:	Mon Oct 01 11:32:14 2018	
	Reference	Reading
Low Reference:	100.00 degF	109.43 degF
High Reference:	350.00 degF	405.87 degF
Gain:	0.84	
Offset:	7.72	
Delta Spacing	1	

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Company	TEP Rocky Mountain LLC
Well	Federal RWF 443-11
Field	Rulison
County	Garfield
State	Colorado