RELIANCE OILFIELD SERVICES

Radial Cement Bond
Gamma Ray
Casing Collar Log

Company TEP Rocky Mountain LLC
Well Strait Bottom Ranch SG 413-22
Field Grand Valley
County Garfield
State Colorado

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County Garfield State Colorado
Location: API # : 05-045-24009
SEC 22 TWP 7S RGE 96W
Other Services
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			Elevation
Permanent Datum	Ground Level	Elevation 5665'	K.B. 5689'
Log Measured From	Kelly Bushing	24 FT	D.F. 5688'
Drilling Measured From	Kelly Bushing		G.L. 5665'

Date	21-APR-2020
Run Number	One
Depth Driller	6122 FT
Depth Logger	6083 FT
Bottom Logged Interval	6068 FT
Top Log Interval	Surface
Open Hole Size	8.750"
Type Fluid	Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	186°F
Estimated Cement Top	See Log
Time Well Ready	ROA
Time Logger on Bottom	10:53
Equipment Number	HD-0331
Location	Grand Junction, CO
Recorded By	Z. Fisher
Witnessed By	--

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	32.3	H-40	Surface	1041 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	6081 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 from 3258 - 3280 FT
Recorded with 0 PSI Surface Induced Pressure

Thank you for choosing Reliance Oilfield Services, LLC!

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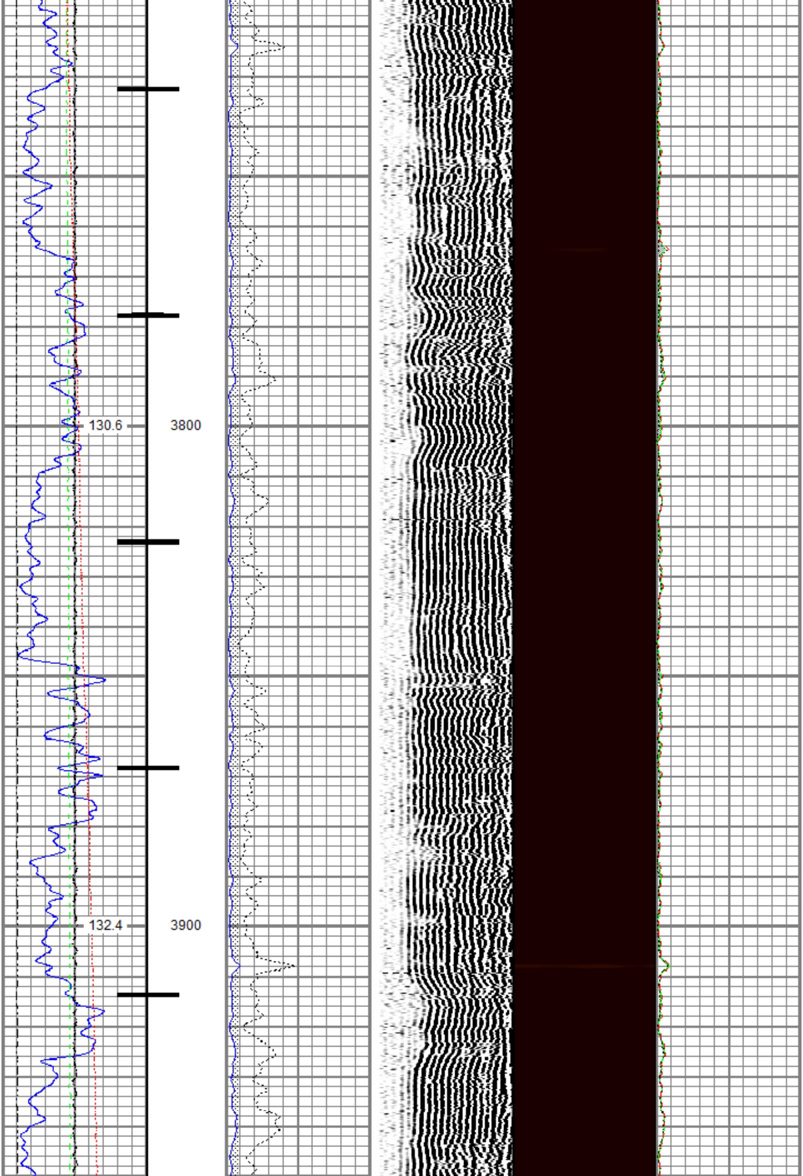
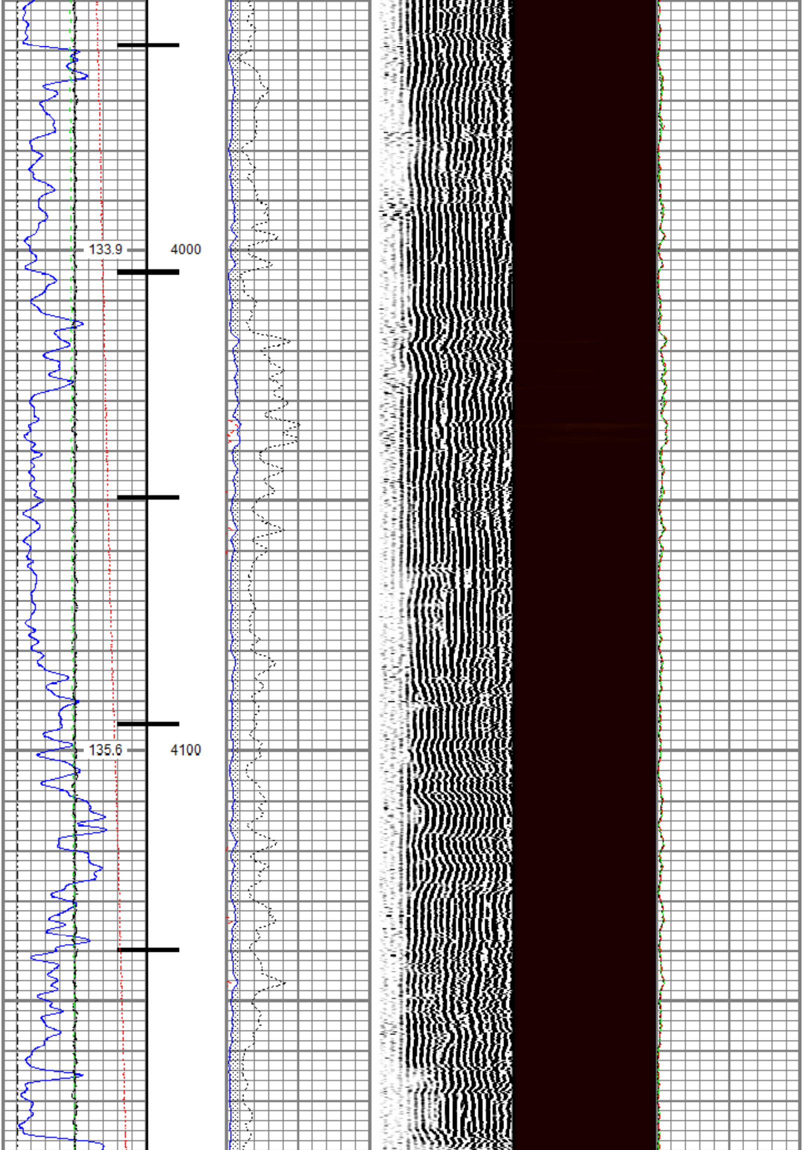
Main Pass

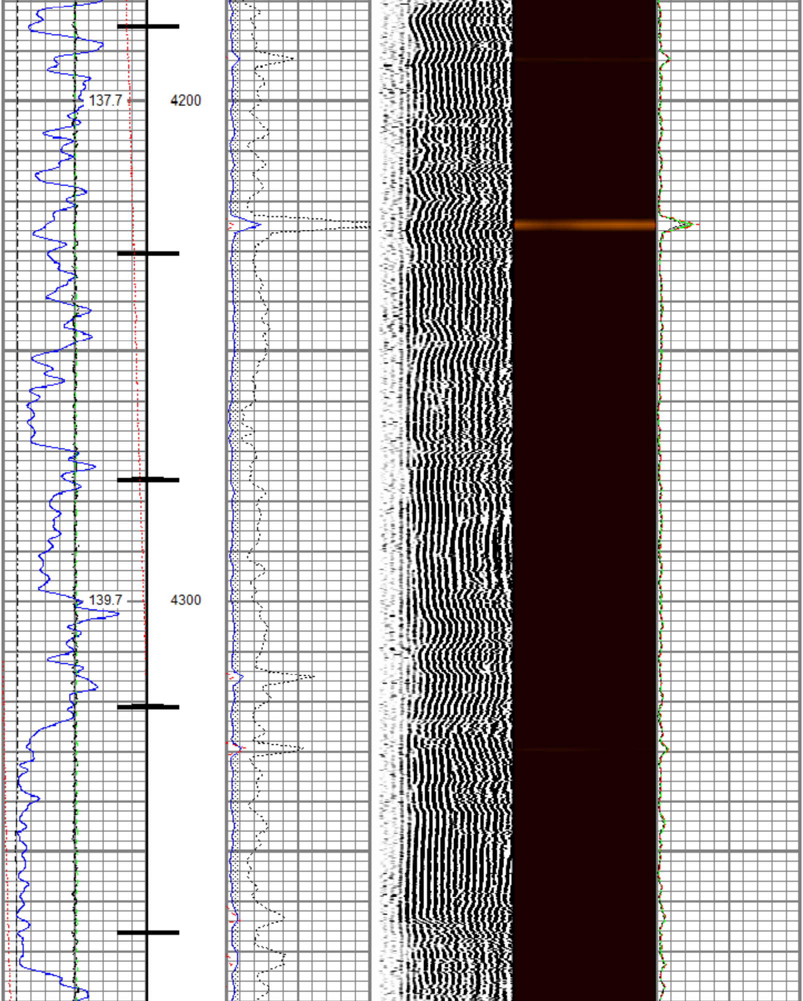
Recorded With 0 PSI Surface Induced Pressure

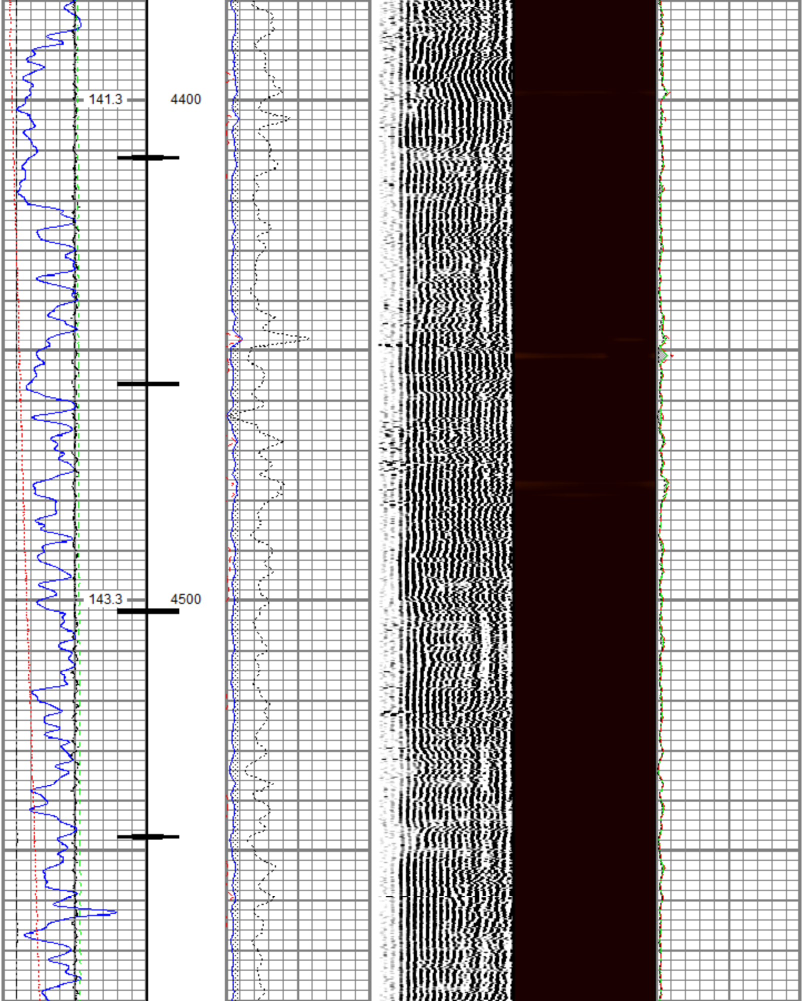
Database File	tep\tep_strait bottom ranch sg 413-22_rbl_04-21-20\processed_tep_strait bottom ranch sg 413-22_rbl_04-
Dataset Pathname	main.1
Presentation Format	ros_radii_tep
Dataset Creation	Wed Apr 22 12:34:25 2020
Charted by	Depth in Feet scaled 1:240

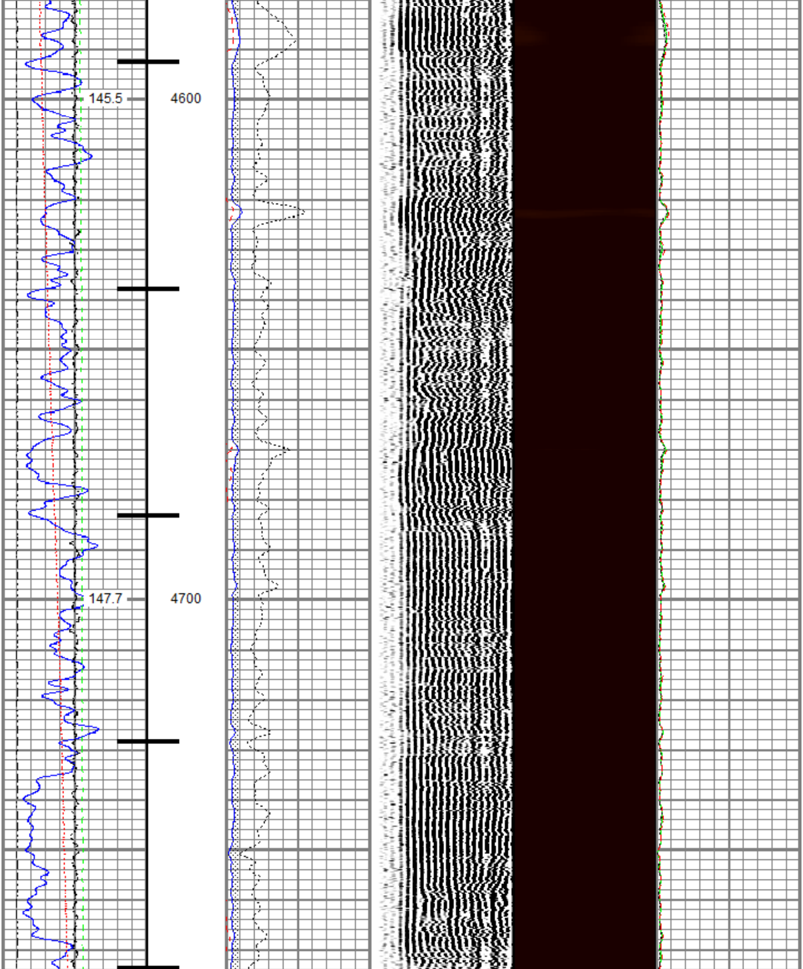
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200	0 (mV) 100	200 (usec) 1200		0 150
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Line Speed	0 (mV) 20			0 150
-150 (ft/min) 150	3' Travel Time			Maximum Amplitude
Line Tension	300 (usec) 200			0 150
0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

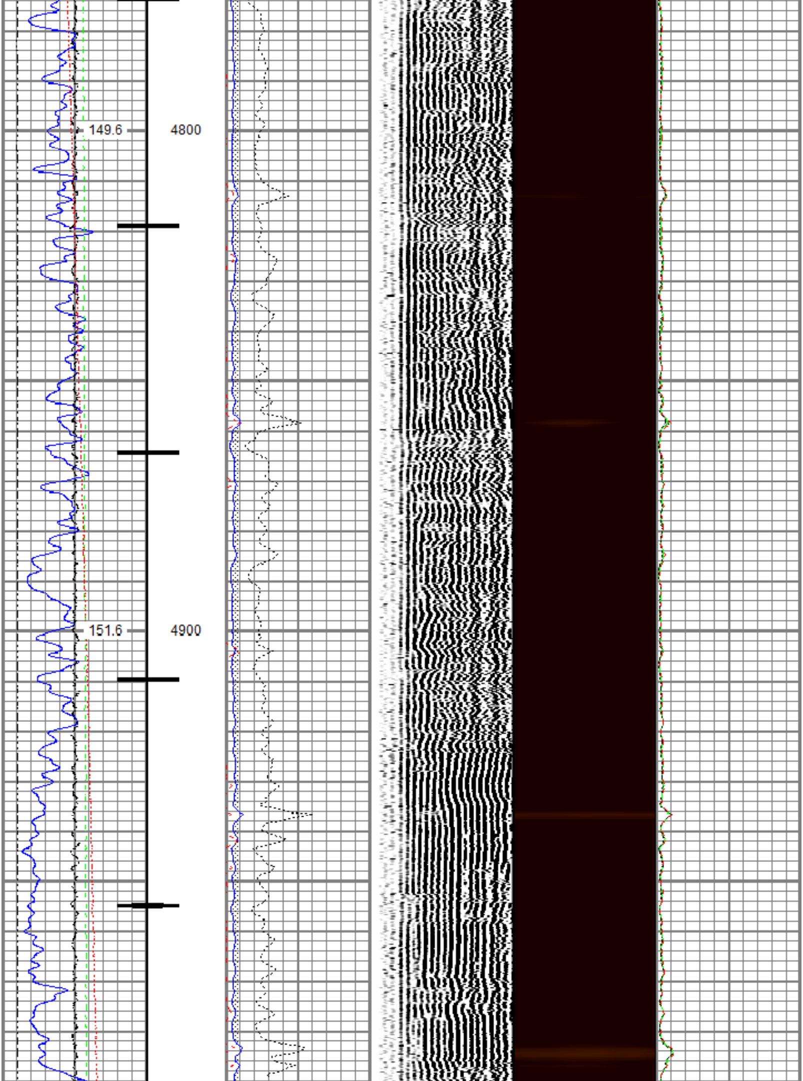


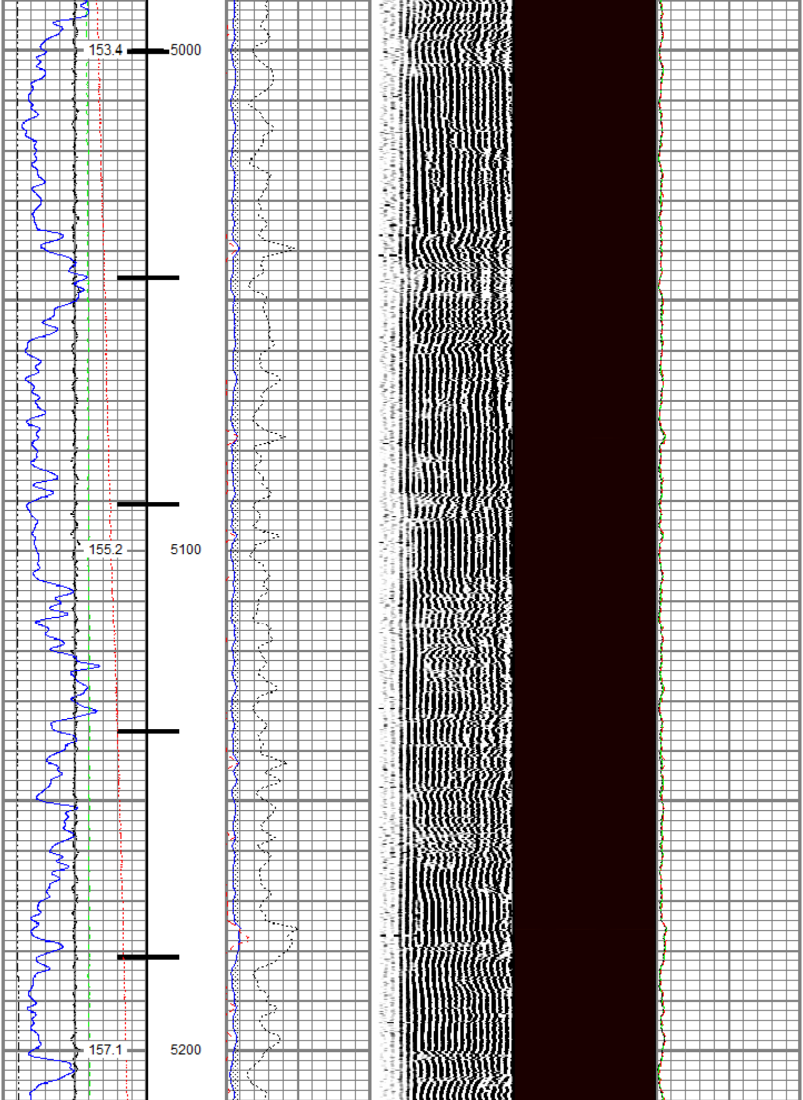


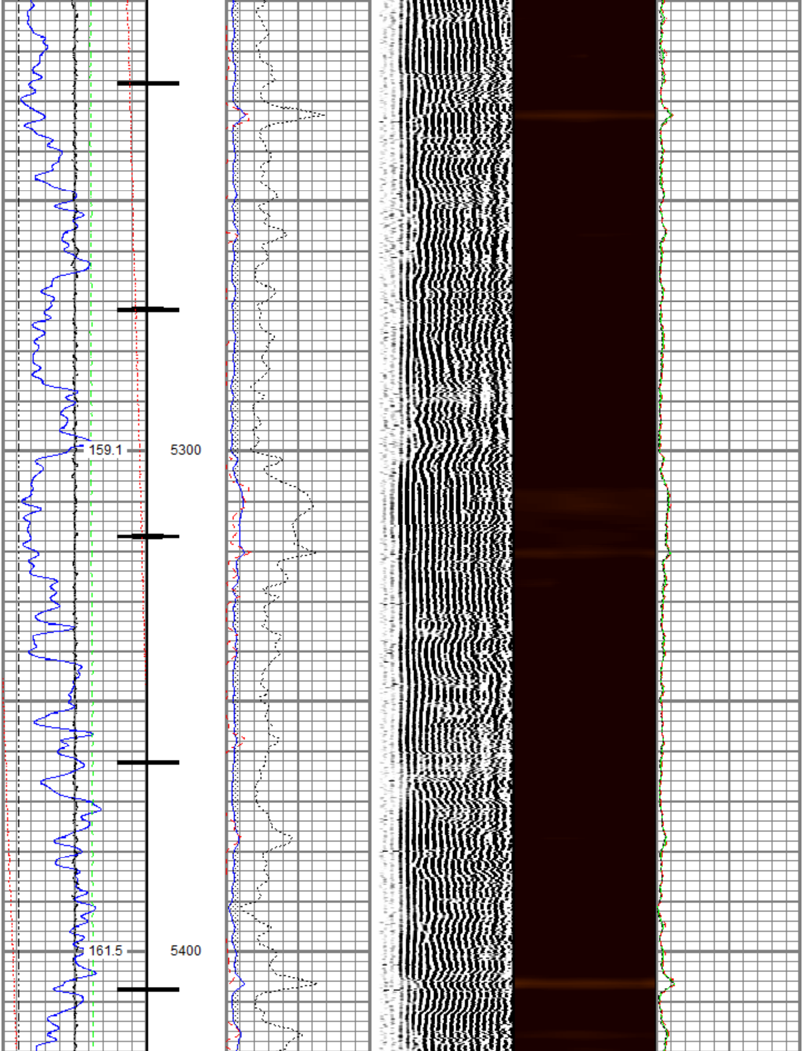


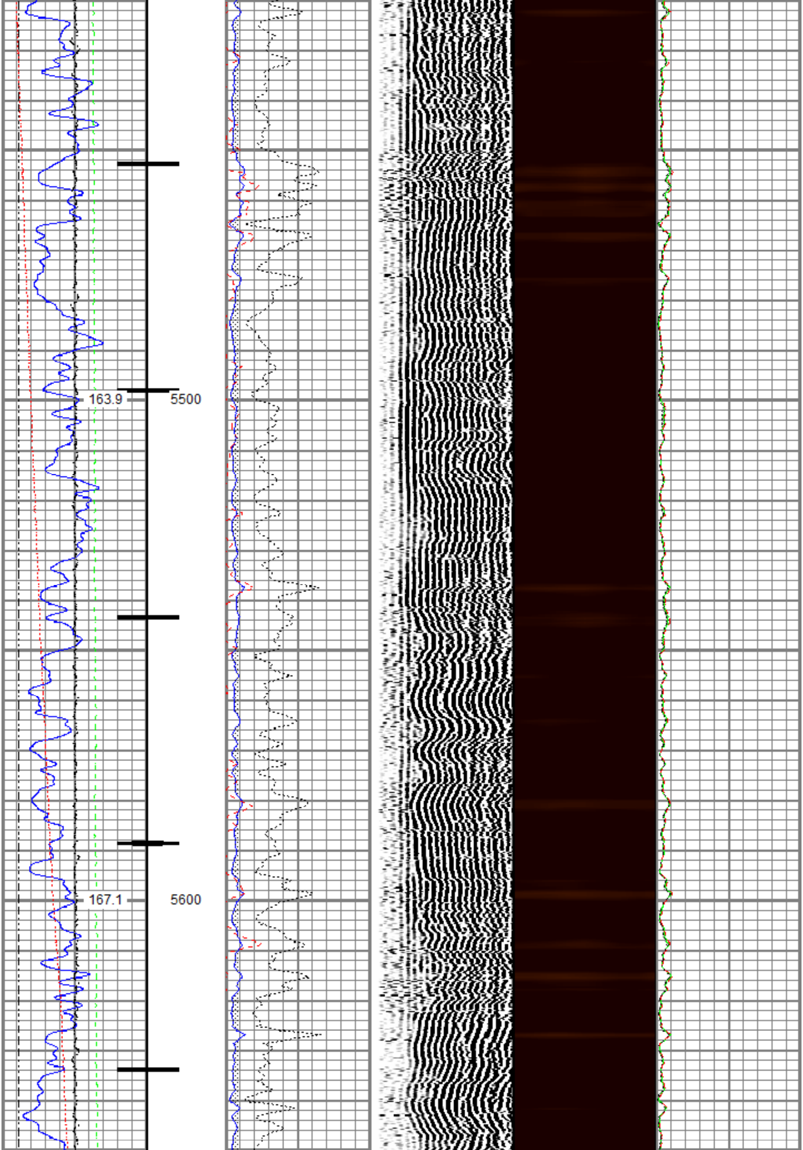


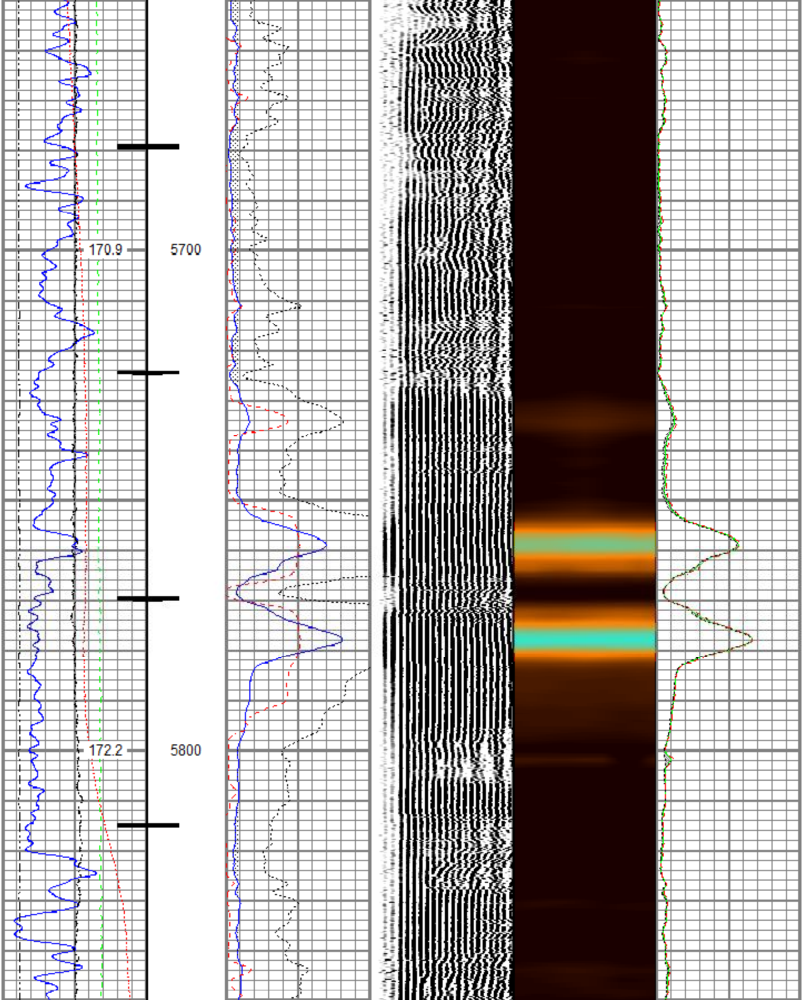


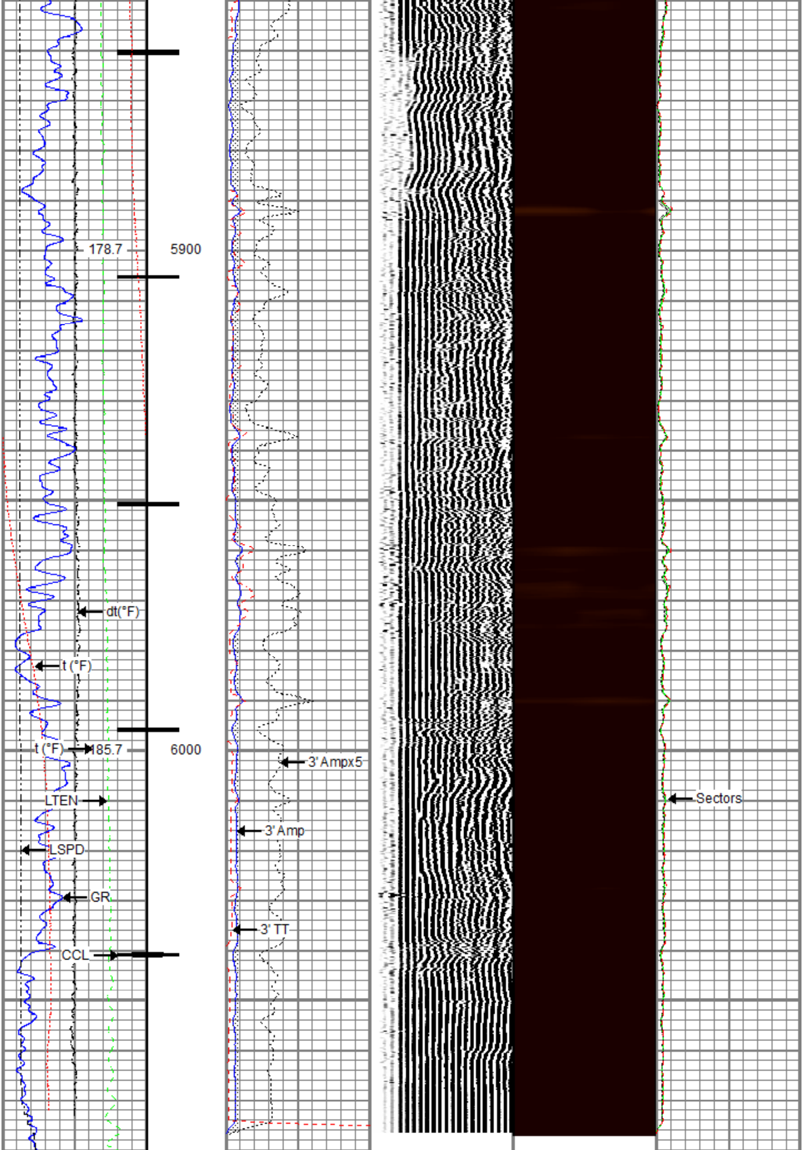












Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200		0 (mV) 100	200 (usec) 1200		0 150
Casing Collar Locator		3' Amplitude x 5			Mimimum Amplitude
Line Speed		0 (mV) 20			0 150
-150 (ft/min) 150		3' Travel Time			Maximum Amplitude
Line Tension		300 (usec) 200			0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

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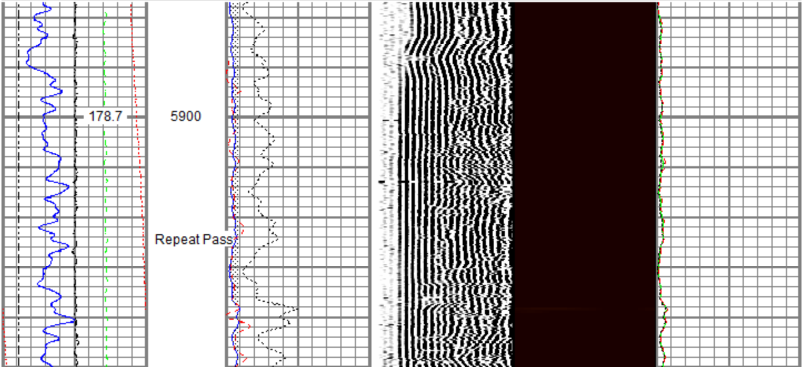
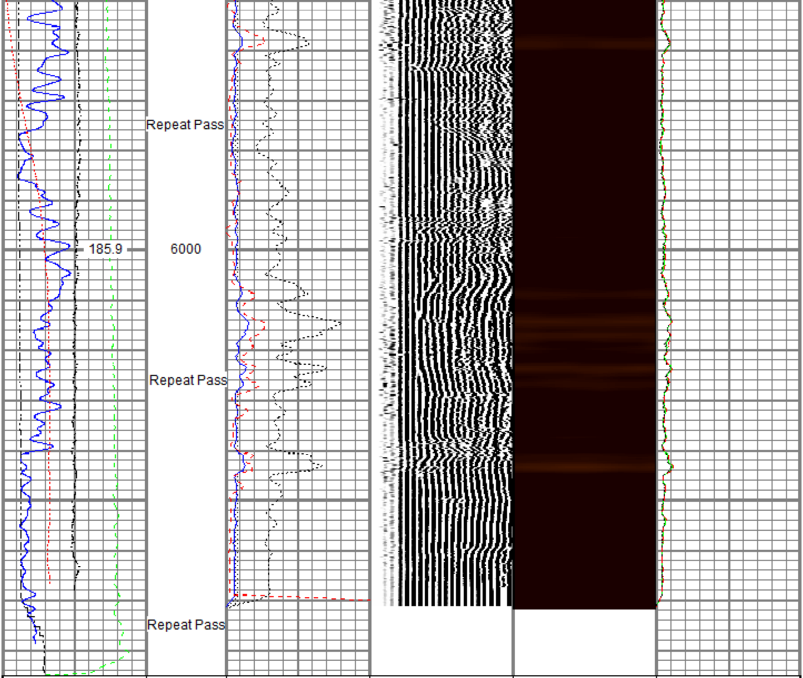
Repeat Pass

Recorded With 0 PSI Surface Induced Pressure

Database File	tep\tep_strait bottom ranch sg 413-22_rbl_04-21-20\processed_tep_strait bottom ranch sg 413-22_rbl_04-2
Dataset Pathname	repeat.2
Presentation Format	ros_radii_tep
Dataset Creation	Wed Apr 22 12:42:22 2020
Charted by	Depth in Feet scaled 1:240

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

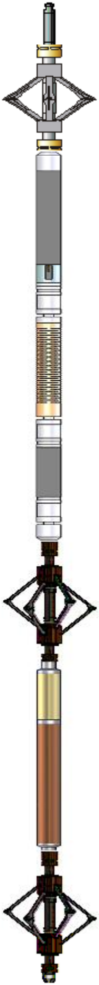




Gamma Ray 0 (GAPI) 200		3' Amplitude 0 (mV) 100	5' Variable Density Log 200 (usec) 1200	Sector Map	Average Amplitude 0 150
Line Speed -150 (ft/min) 150		3' Amplitude x 5 0 (mV) 20			Mimimum Amplitude 0 150
Line Tension 0 (lb) 2000		3' Travel Time 300 (usec) 200			Maximum Amplitude 0 150
Differential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

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)

TEMP	17.11
WVFS8	14.88
WVFS7	14.88
WVFS6	14.88
WVFS5	14.88
WVFS4	14.88
WVFS3	14.88
WVFS2	14.88
WVFS1	14.88
WVFCAL	14.88
WVF3FT	14.88
WVF5FT	13.88
CCL	6.80
GR	4.06



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
Probe Radii-2750 RBT (FW1311-021) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
BTA-MUD BTA 2-3/4" Roller 6 Arm Centralizer with Reversible Ends	2.92	2.72	25.00
Probe GR-CCL ANL-2750 A (051217) Probe 2.75" Analog 4 Channel Pulse Gamma Ray/CCL Combined	4.54	2.75	55.00
BTA-MUD BTA 2-3/4" Roller 6 Arm Centralizer with Reversible Ends	2.92	2.72	25.00
GO BN-14375 GO 1-7/16" Bull Nose with Go Box Top	0.25	1.44	1.00

Dataset:	processed_tep_strait bottom ranch sg 413-22_rbl_04-21-20.db: field/well/run1/main.1
Total length:	23.60 ft
Total weight:	246.60 lb
O.D.:	2.75 in

Calibration Report

Database File	c:\programdata\warrior\data\tep\tep_strait bottom ranch sg 413-22_rbl_04-21-20\processed_tep_strait bottom
Dataset Pathname	main.1
Dataset Creation	Wed Apr 22 12:34:25 2020

Gamma Ray Calibration Report

Serial Number:	051217	
Tool Model:	2750 A	
Performed:	Mon Oct 01 11:32:35 2018	
Calibrator Value:	637.0	GAPI
Background Reading:	115.3	cps
Calibrator Reading:	1027.7	cps
Sensitivity:	0.6982	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	FW1311-021	
Tool Model:	2750 RBT	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	28.002	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.005	0.737	0.800	81.196	109.801	0.283
CAL	0.003	0.756				
5'	0.004	0.484	0.800	81.196	167.592	0.086
SUM						
S1	-0.000	0.753	0.000	100.000	132.724	0.053
S2	0.004	0.724	0.000	100.000	138.847	-0.567
S3	0.006	0.751	0.000	100.000	134.161	-0.775
S4	0.004	0.794	0.000	100.000	126.627	-0.562
S5	0.003	0.778	0.000	100.000	129.083	-0.412
S6	0.003	0.756	0.000	100.000	132.828	-0.443
S7	0.004	0.746	0.000	100.000	134.714	-0.560
S8	0.007	0.773	0.000	100.000	130.509	-0.855

Air Zero Calibration, performed Tue Apr 21 06:45:14 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: FW1311-021
Tool Model: 2750 RBT
Performed: Mon Oct 01 11:32:11 2018

	Reference	Reading
Low Reference:	100.00 degF	112.12 degF
High Reference:	350.00 degF	415.62 degF

Gain: 0.82
Offset: 7.65
Delta Spacing 1

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Company	TEP Rocky Mountain LLC
Well	Strait Bottom Ranch SG 413-22
Field	Grand Valley
County	Garfield
State	Colorado