RELIANCE
OILFIELD SERVICES

Radial Cement Bond
Gamma Ray
Collar Locator Log

Company	TEP ROCKY MOUNTAIN LLC.
Well	Chevron TR 524-21-597
Field	Trail Ridge
County	Garfield
State	Colorado

Company TEP ROCKY MOUNTAIN LLC.
Well Chevron TR 524-21-597
Field Trail Ridge
County Garfield State Colorado

Location: API # : 05-045-23348
663' FSL & 1850' FWL SESW
SEC 21 TWP 5S RGE 97W

Other Services
PDN

Permanent Datum	Ground Level	Elevation	8292'
Log Measured From	Kelly Bushing	24 FT	
Drilling Measured From	Kelly Bushing		

Elevation
K.B. 8316'
D.F. 8315'
G.L. 8292'

Date	23-APR-2017		
Run Number	One		
Depth Driller	9382 FT		
Depth Logger			
Bottom Logged Interval	9254 FT		
Top Log Interval	Surface		
Open Hole Size	8.750"		
Type Fluid	Fresh Water		
Density / Viscosity	8.34 lb/gal		
Max. Recorded Temp.	253° F		
Estimated Cement Top	See Log		
Time Well Ready	ROA		
Time Logger on Bottom	12:00		
Equipment Number	HD 329		
Location	Grand Junction		
Recorded By	M. Kochevar		
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	2561 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	9382 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
Ground Level 1 FT below the top of cut pipe
Marker Joint logged at 5551 FT - 5569 FT
Log ran from 9254 FT to surface
Recorded with 0 PSI surface induced pressure

Thank you for choosing Reliance Oilfield Services, LLC!!

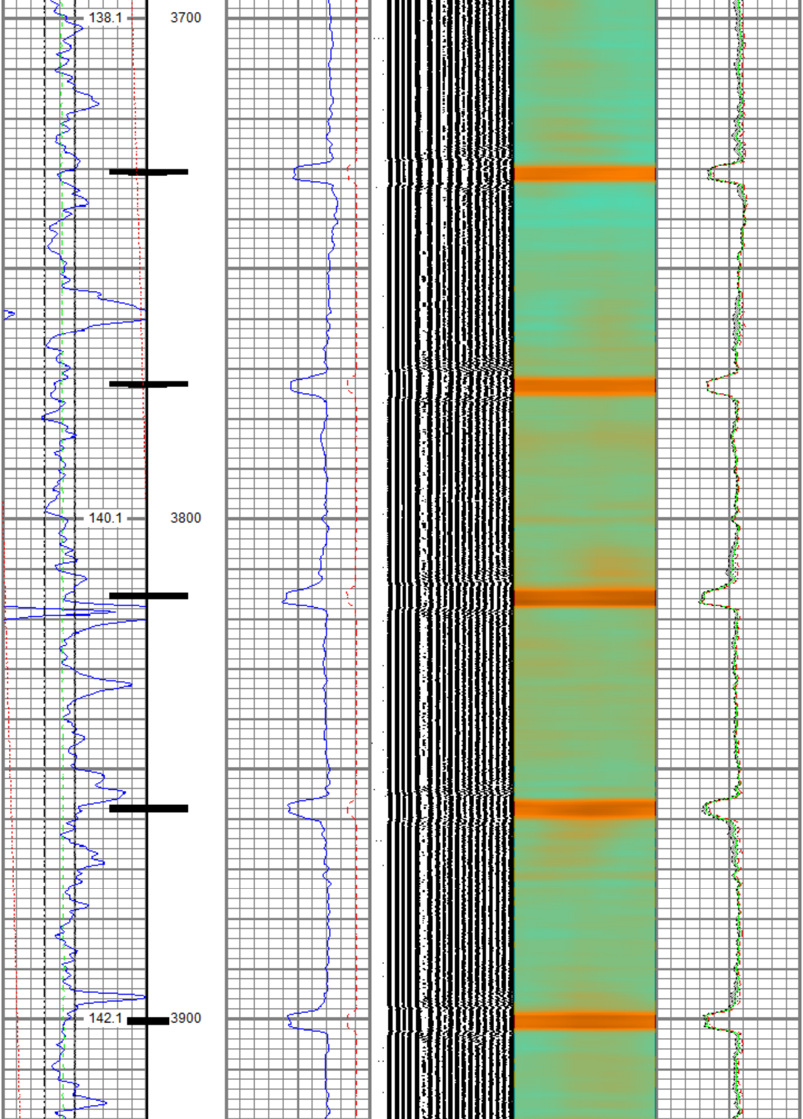
RELIANCE
OILFIELD SERVICES

Main Pass

Recorded with 0 PSI Surface Induced Pressure

Database File	tr 524-21-597\processed_tep_chevron tr 524-21-597_04-23-17_rbl.db
Dataset Pathname	pass6.1
Presentation Format	ros_rbt004_tep
Dataset Creation	Sun Apr 23 16:35:12 2017
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 1200	10 110	0 150
Casing Collar Locator		3' Amplitude x 5			MimimumAmplitude
Line Speed		0 (mV) 20			0 150
-150 (ft/min) 150		3' Travel Time			MaximumAmplitude
Line Tension		300 (usec) 200			0 150
0 (lb) 2000					
Differential Temperature					
-2 (degF) 2					
Temperature					
0 (degF) 200					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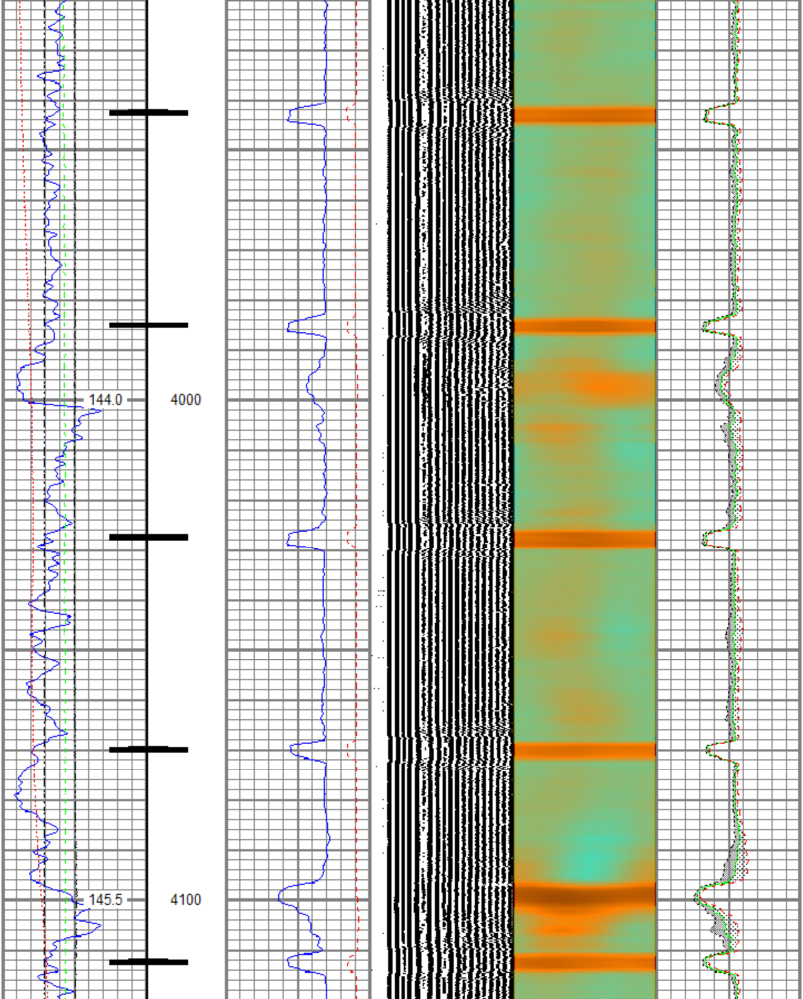
3700
140.1
3800
142.1
3900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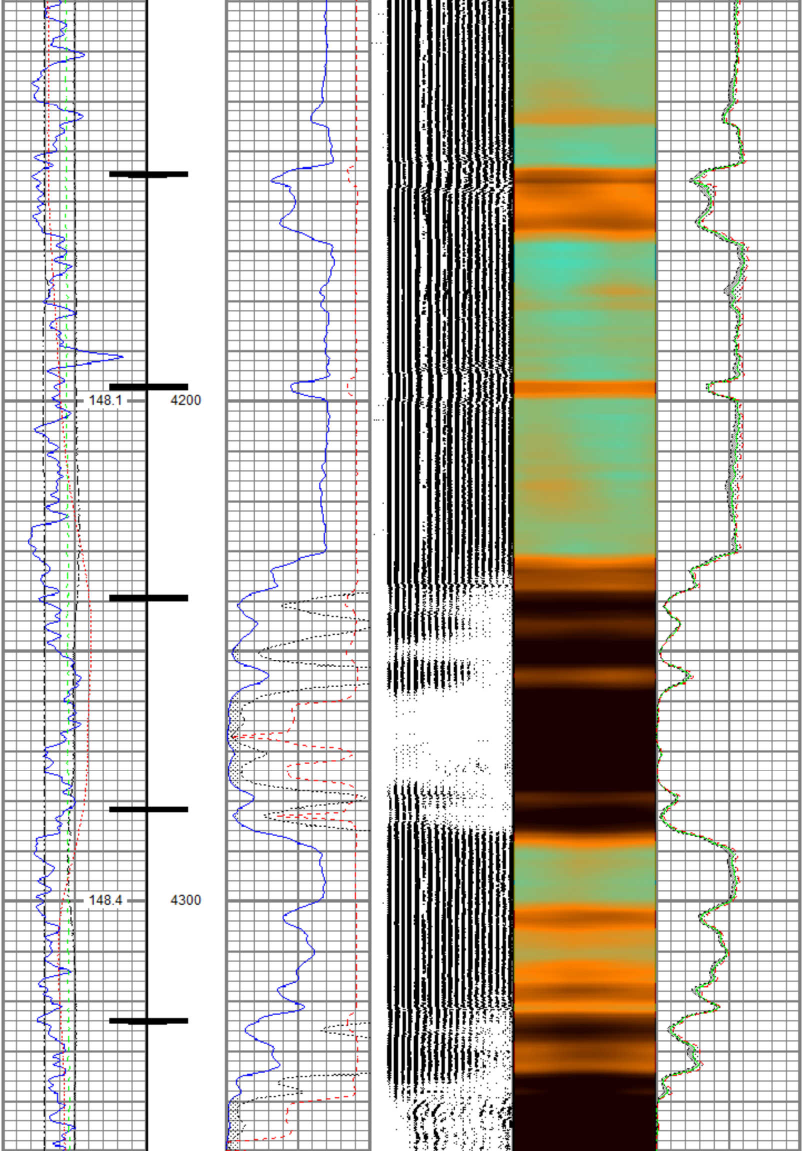
4000
145.5
4100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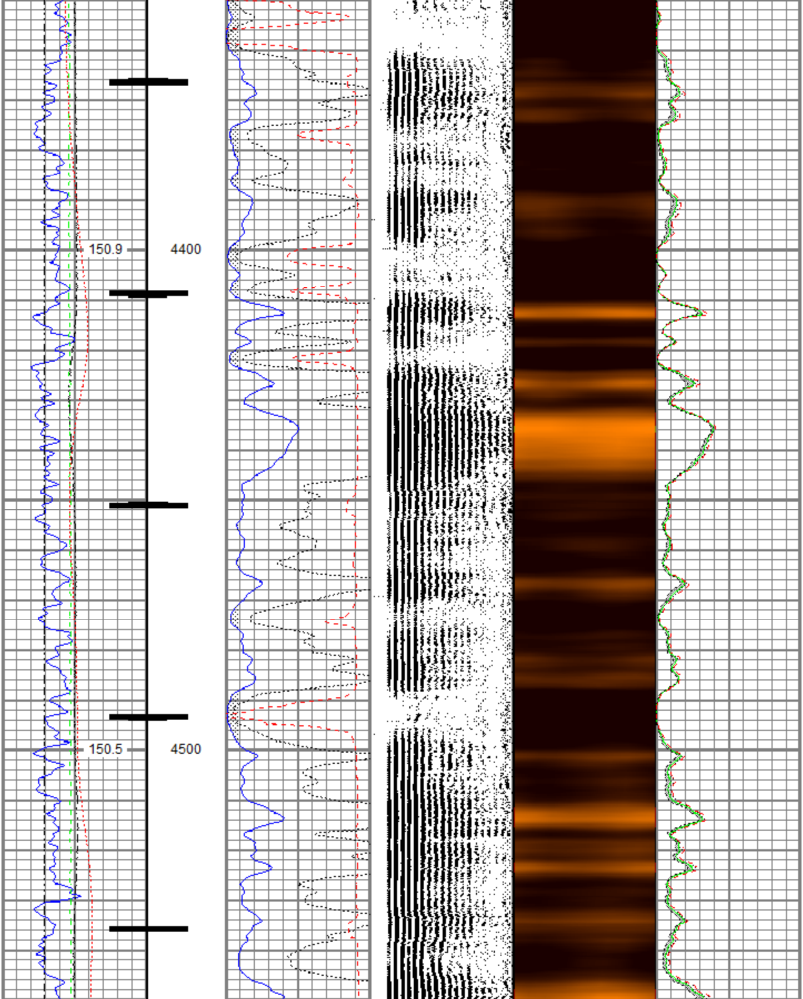
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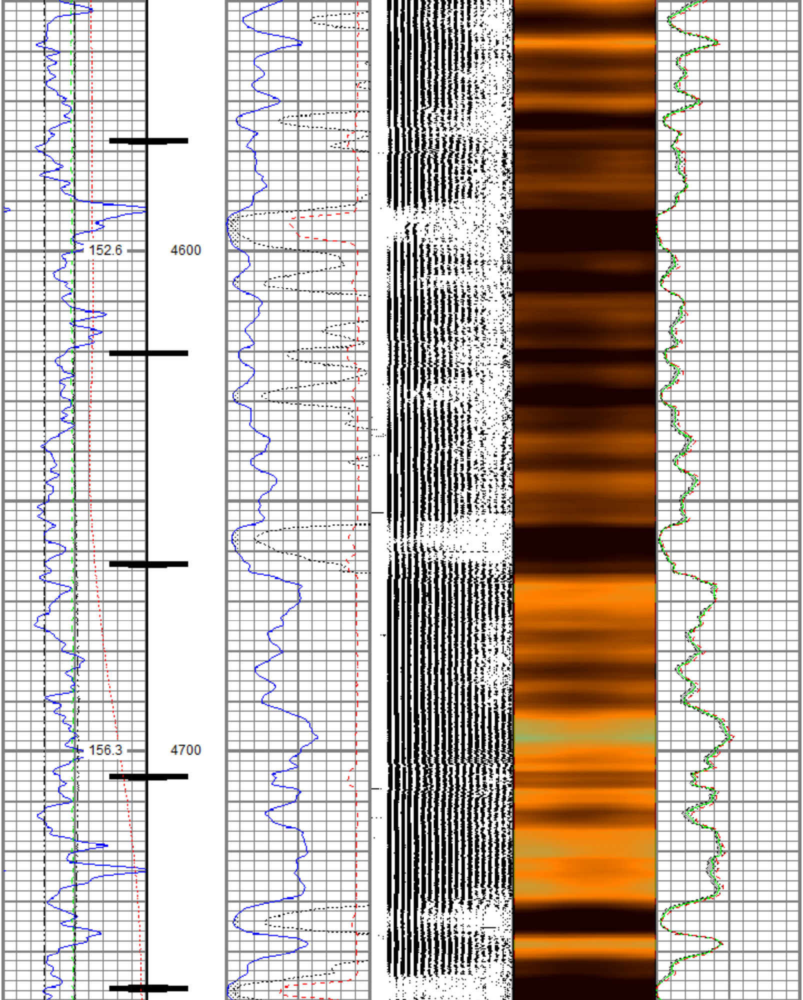
4400
150.5
4500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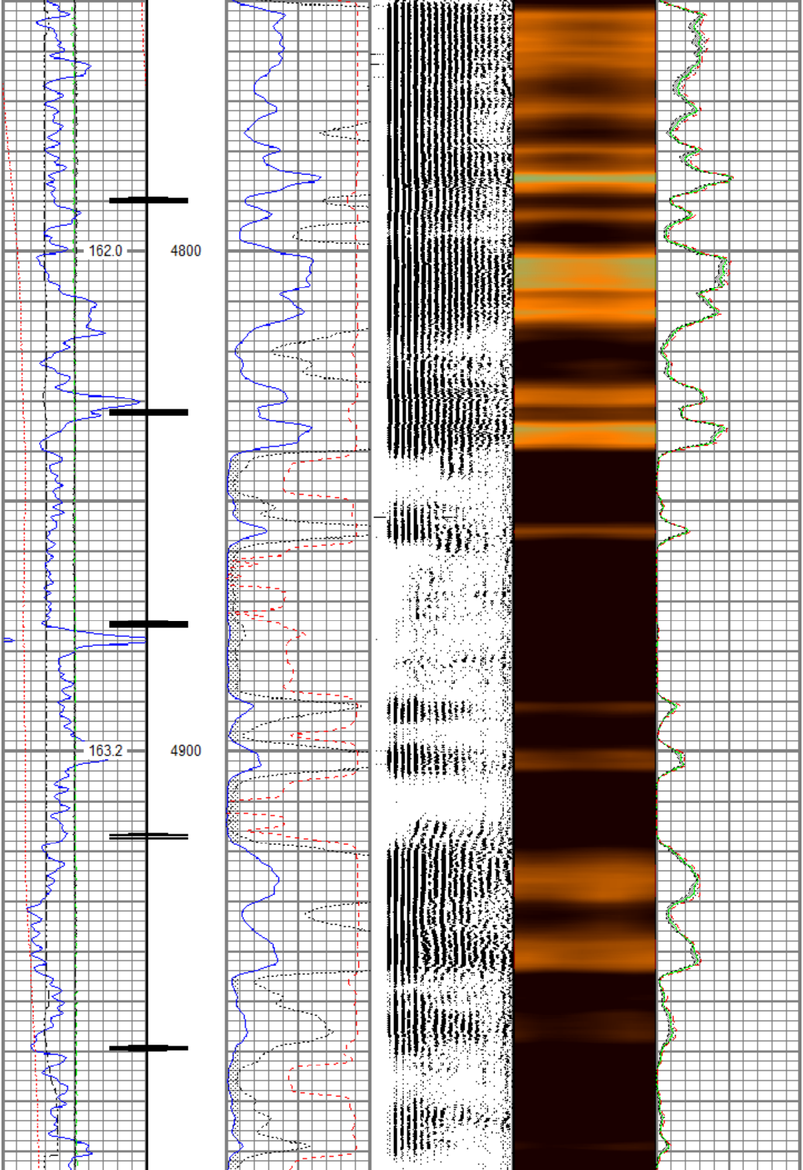
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163.2
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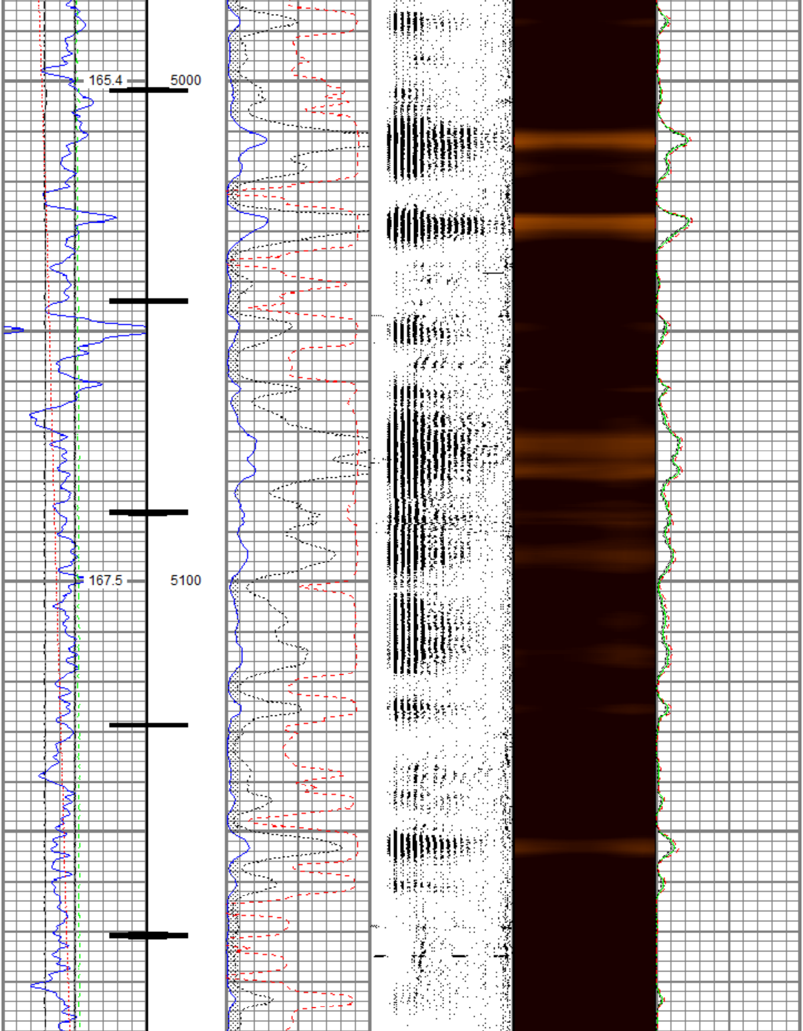
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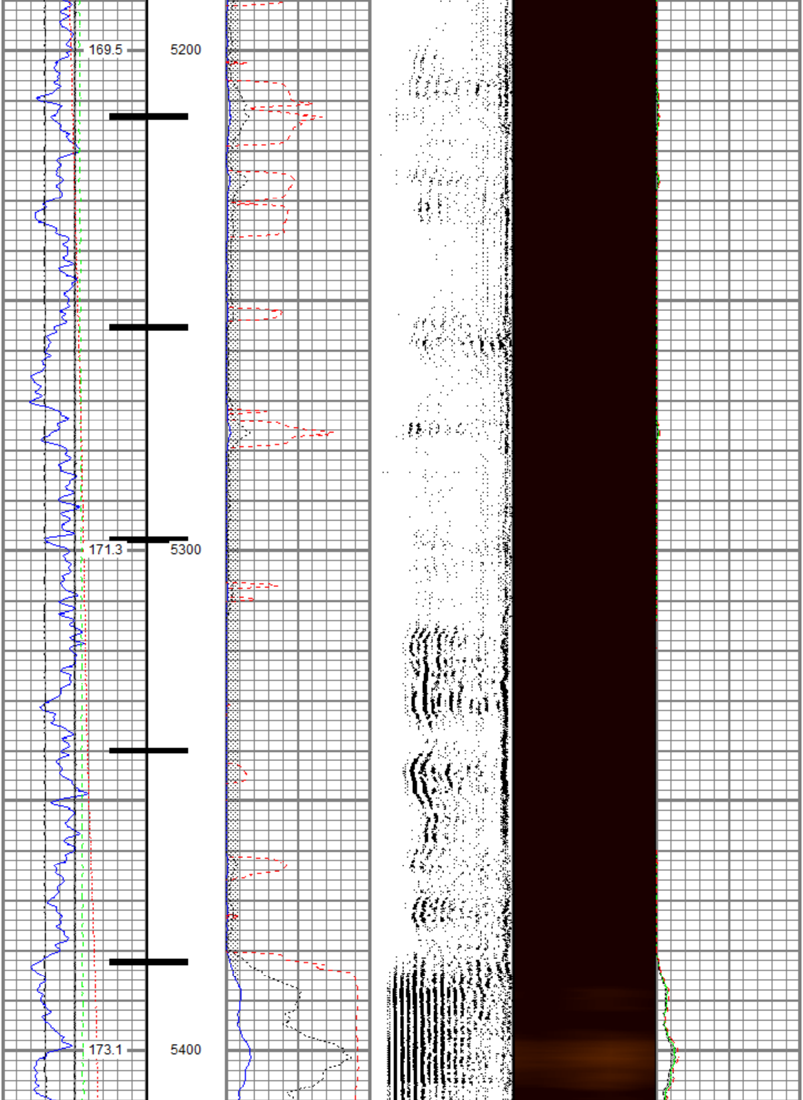
167.5
5100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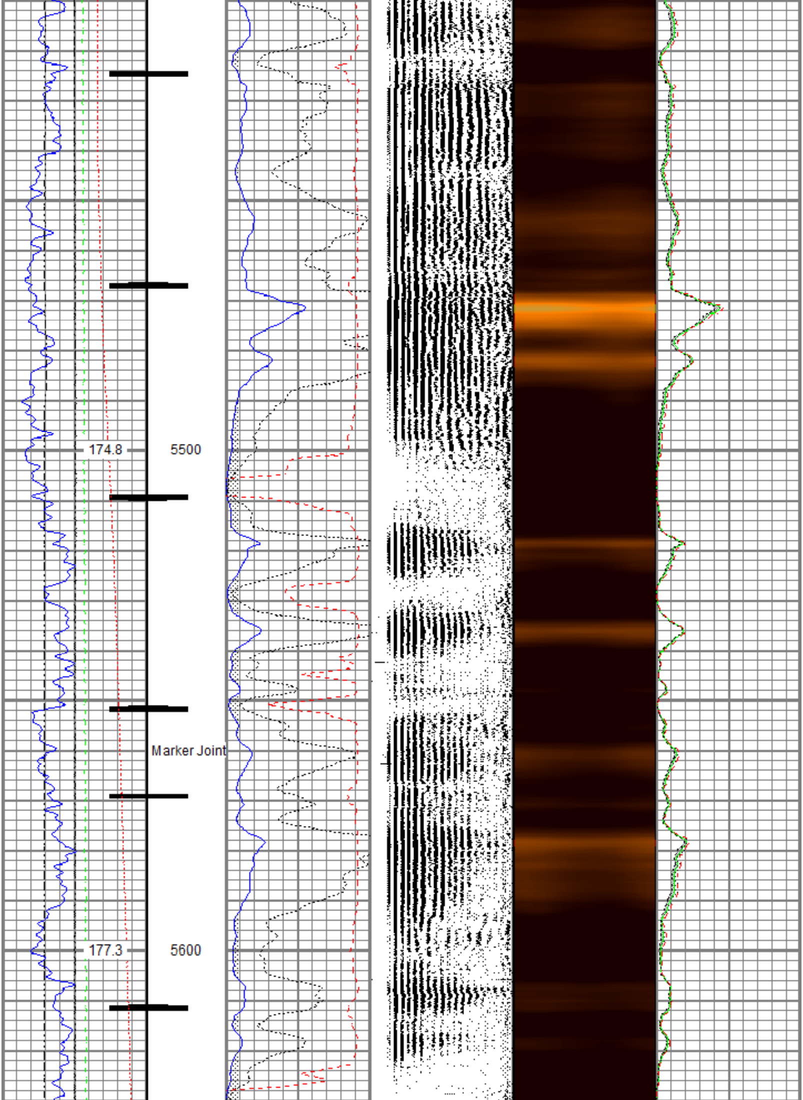
171.3
5300
173.1
5400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Marker Joint
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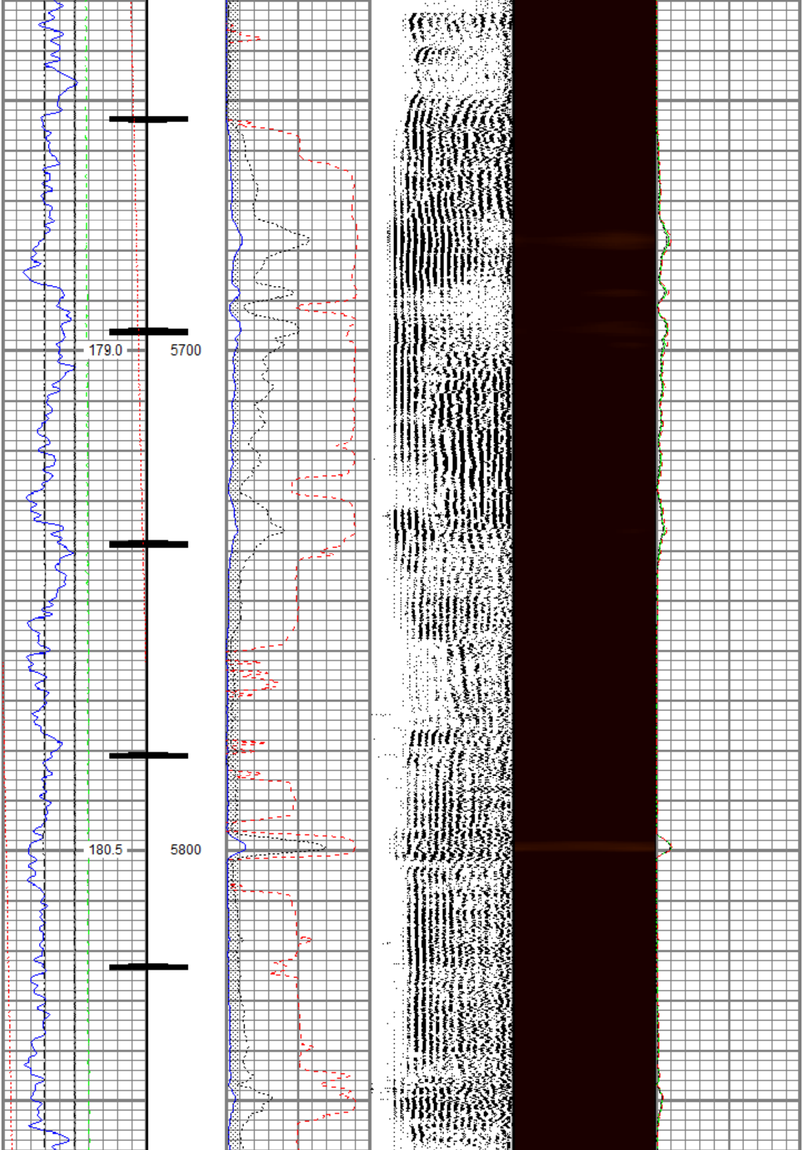
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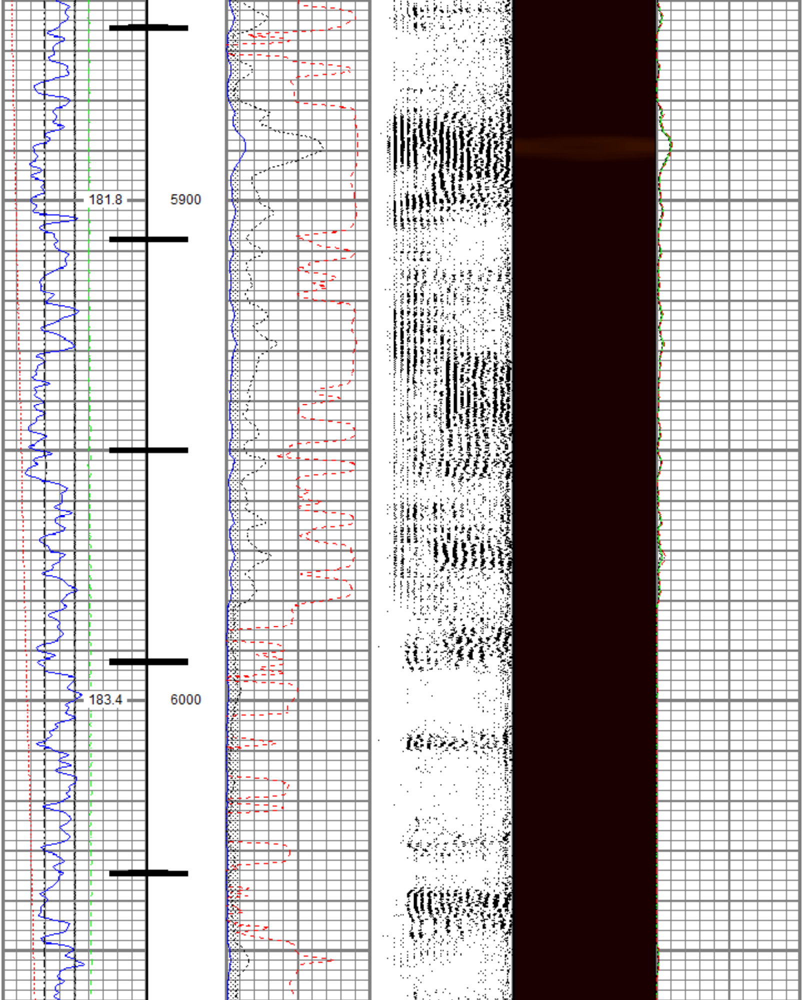
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183.4
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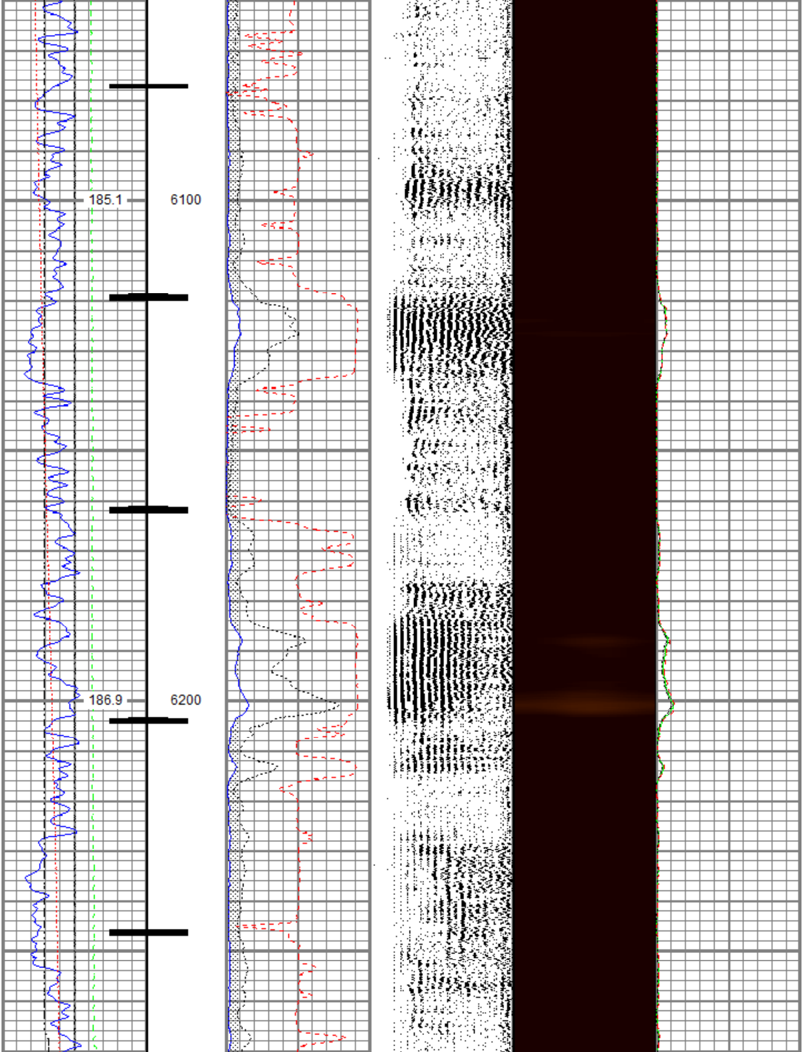
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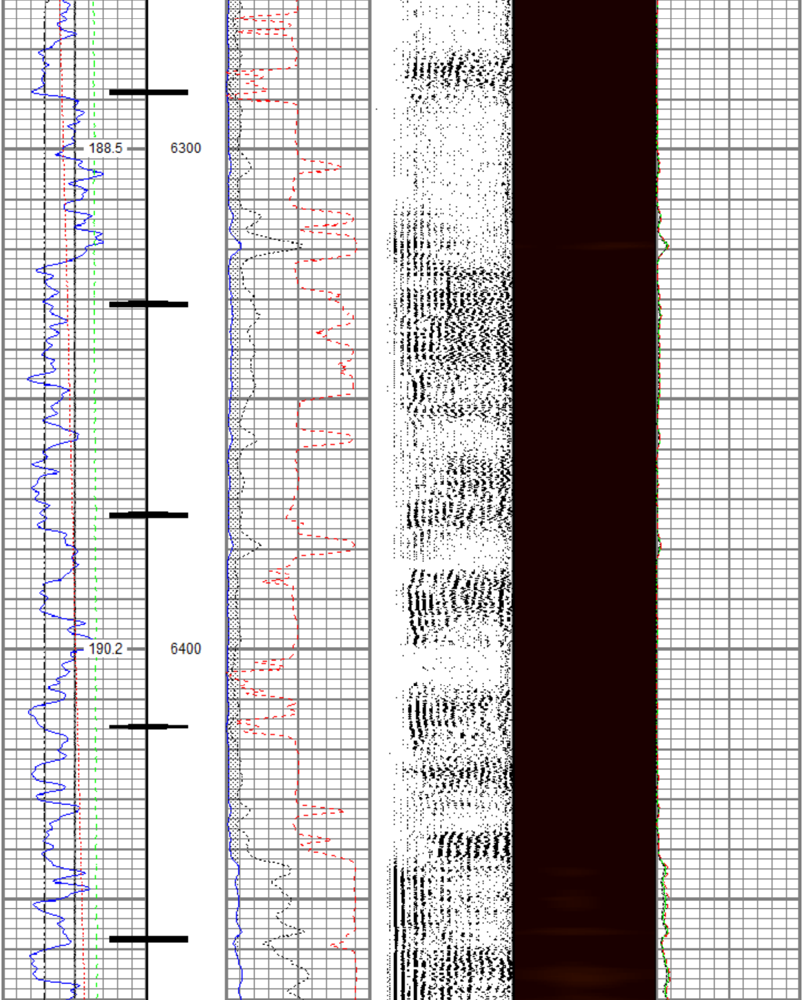
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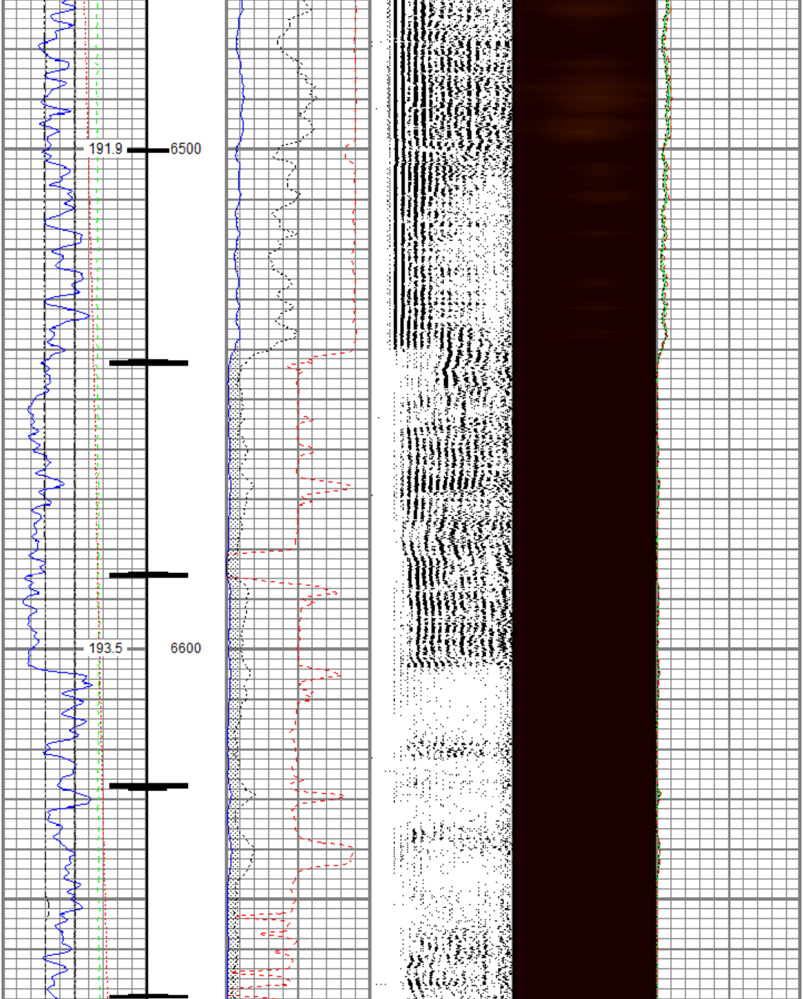
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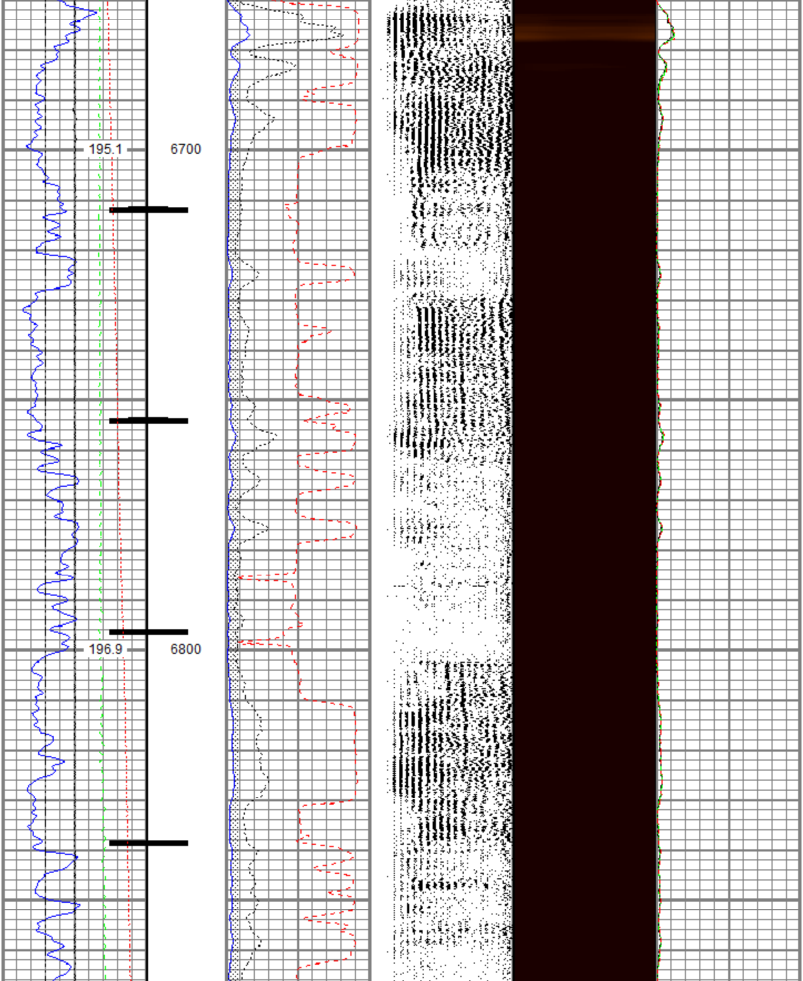
6500
193.5
6600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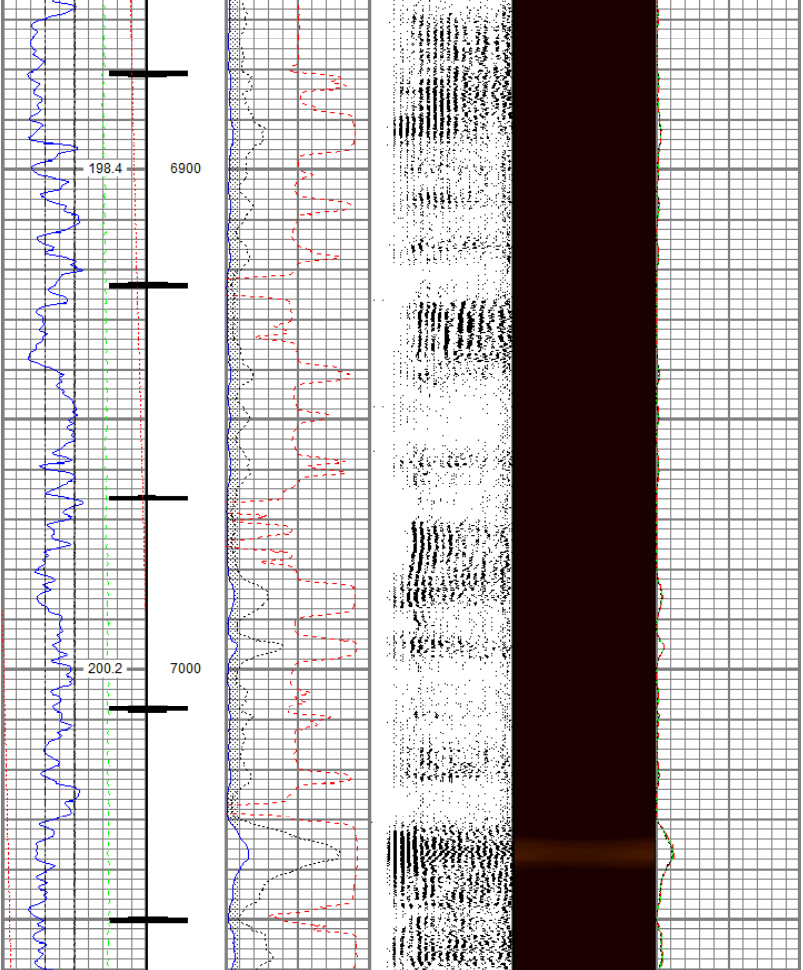
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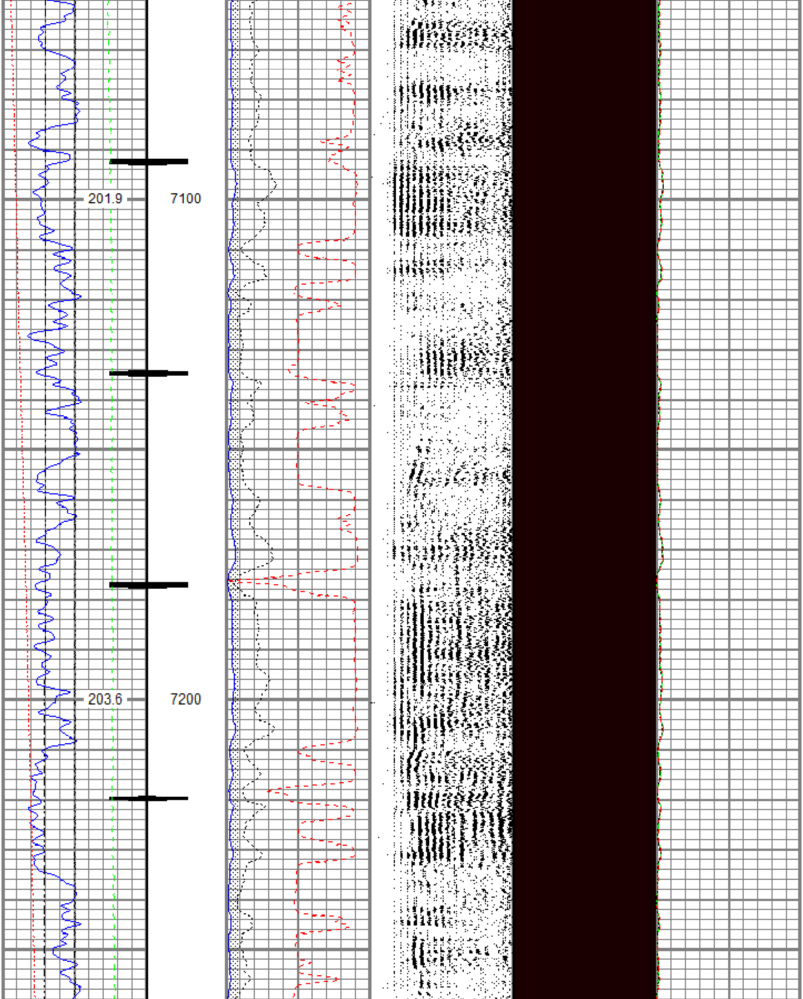
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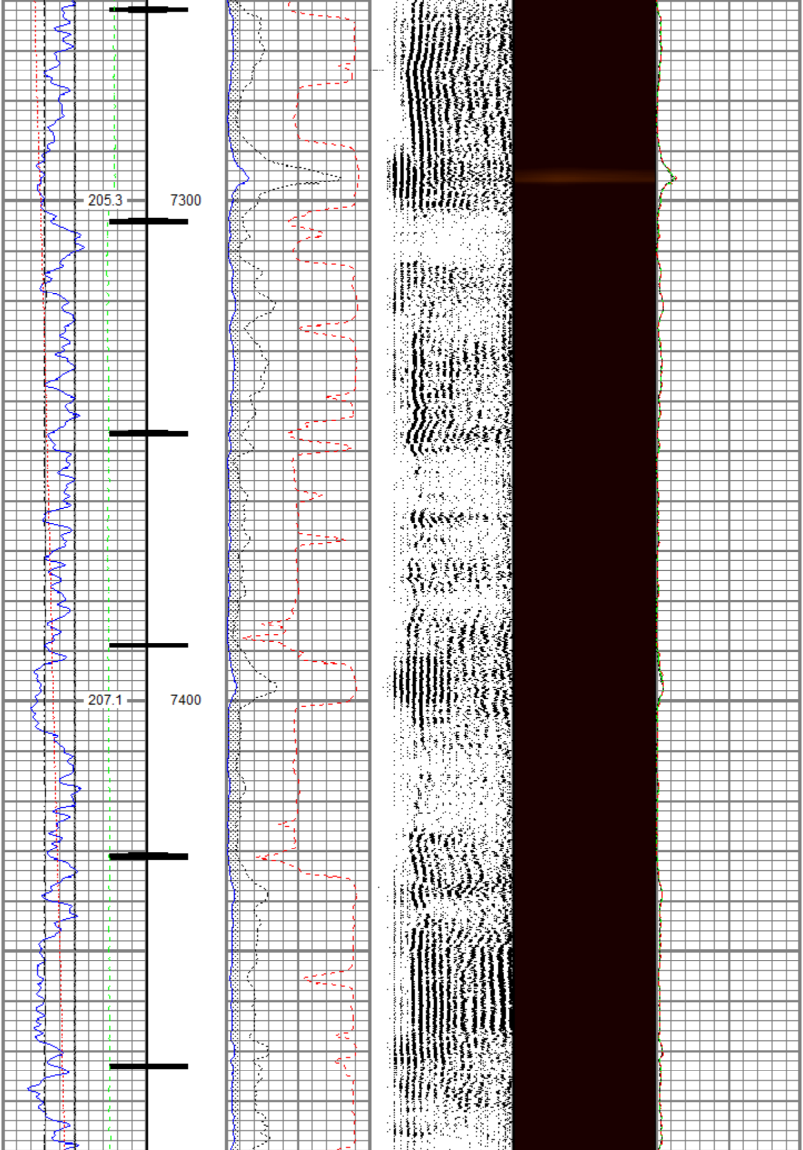
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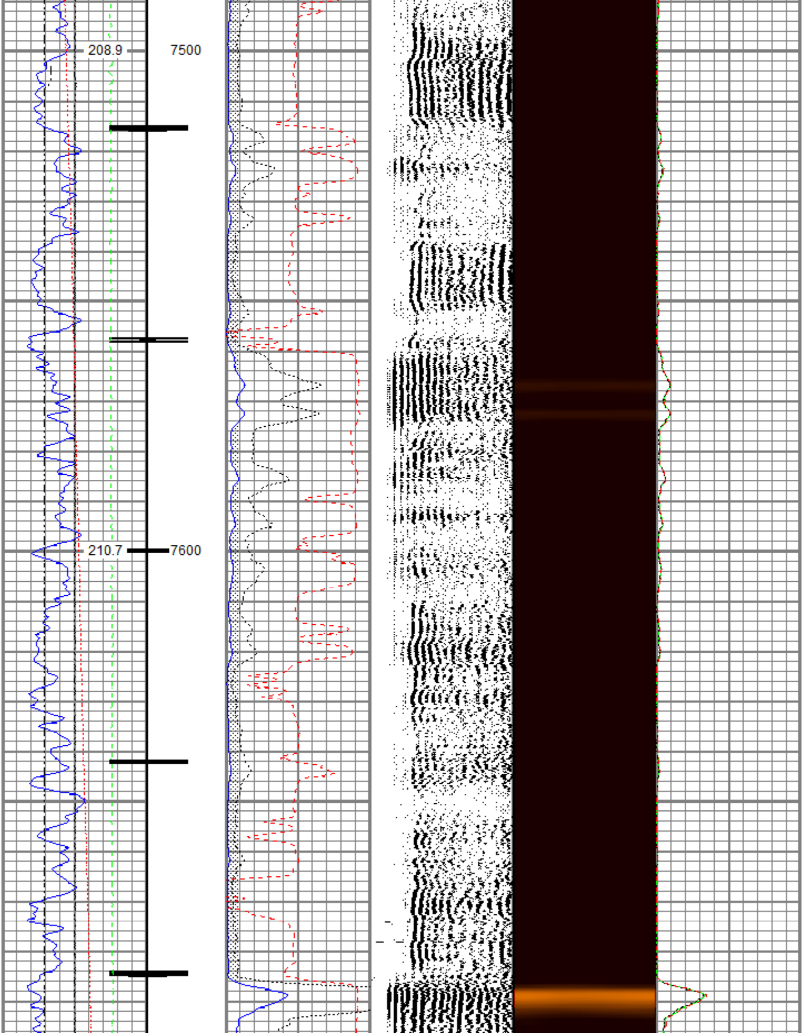

208.9
7500
210.7
7600

Gamma Ray
0 (GAPI) 200
Casing Collar Locator
Line Speed
-150 (ft/min) 150
Line Tension
0 (lb) 2000
Differential Temperature
-2 (degF) 2
Temperature
0 (degF) 20

3' Amplitude
0 (mV) 100
3' Amplitude x 5
0 (mV) 20
3' Travel Time
300 (usec) 200

5' Variable Density Log
200 1200

Sector Map
10 110

Average Amplitude
0 150
Mimimum Amplitude
0 150
Maximum Amplitude
0 150

Repeat Pass

Recorded with 0 PSI Surface Induced Pressure

Database File	tr 524-21-597\processed_tep_chevron tr 524-21-597_04-23-17_rbl.db
Dataset Pathname	pass4.1
Presentation Format	ros_rbt004_tep
Dataset Creation	Tue Apr 25 15:49:15 2017
Charted by	Depth in Feet scaled 1:240

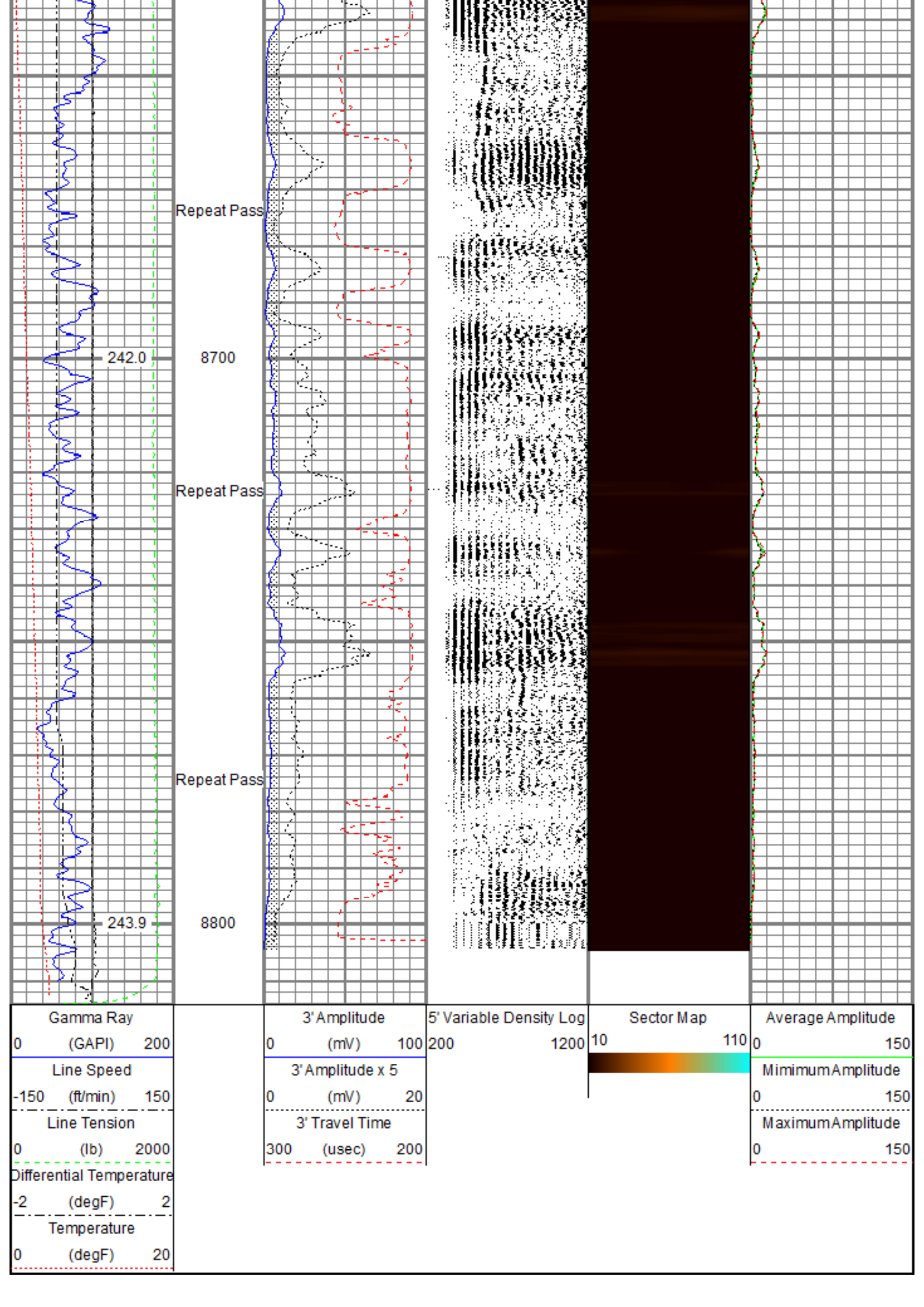
Gamma Ray
0 (GAPI) 200
Line Speed
-150 (ft/min) 150
Line Tension
0 (lb) 2000
Differential Temperature
-2 (degF) 2
Temperature
0 (degF) 20

3' Amplitude
0 (mV) 100
3' Amplitude x 5
0 (mV) 20
3' Travel Time
300 (usec) 200

5' Variable Density Log
200 1200

Sector Map
10 110

Average Amplitude
0 150
Mimimum Amplitude
0 150
Maximum Amplitude
0 150



Gamma Ray
0 (GAPI) 200
Line Speed
-150 (ft/min) 150
Line Tension
0 (lb) 2000
Differential Temperature
-2 (degF) 2
Temperature
0 (degF) 20

3' Amplitude
0 (mV) 100
3' Amplitude x 5
0 (mV) 20
3' Travel Time
300 (usec) 200

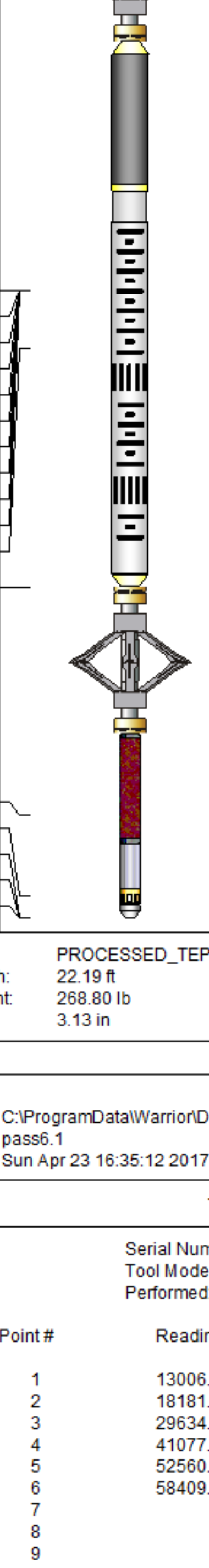
5' Variable Density Log
200 1200

Sector Map
10 110

Average Amplitude
0 150
Mimimum Amplitude
0 150
Maximum Amplitude
0 150

Sensor	Offset (ft)
CCL	18.26
CBLROT	10.87
WVFS8	10.87
WVFS7	10.87
WVFS6	10.87
WVFS5	10.87
WVFS4	10.87
WVFS3	10.87
WVFS2	10.87
WVFS1	10.87
WVF3FT	10.87
WVF5FT	9.87
CBLTEMP	5.73
GR	1.76
TEMP	0.37
HVOLTX	0.00
ITEMPX	0.00
TSTAMP	0.00

Schematic



Description	Length (ft)	O.D. (in)	Weight (lb)
Titan_Electric_Cable_Heads-Titan_1-11/1 Electric Cable Head with 1" Fishing Neck	1.03	1.69	5.40
UW_AGS-UW_AGS_001 (219135) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
UW_XTU-UW_XTU_002 (10012277) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
UW_CCL-UW_CCL_028 (10025621) 3-1/8" Ultrawire Casing Collar Locator	1.61	3.13	36.00
UW_PRC-DSS_RAC 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
UW_RBT-UW_RBT_004 (10012639) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.48	3.13	140.00
UW_PRC-DSS_RAC 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
UW_PGR-UW_PGR_020 (10019371) Production Gamma Ray	1.92	1.69	9.50
UW_PRT-PRT_016 (10025093) Platinum Resistance Thermometer	1.04	1.69	5.20
UW_BUL-UW_BUL_006 (10019730) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20

Dataset:	PROCESSED_TEP_Chevron TR 524-21-597_04-23-17_RBL.db: field/well/run1/pass6.1
Total length:	22.19 ft
Total weight:	268.80 lb
O.D.:	3.13 in

Calibration Report

Database File	C:\ProgramData\Warrior\Data\TR 524-21-597\PROCESSED_TEP_Chevron TR 524-21-597_04-23-17_RBL.
Dataset Pathname	pass6.1
Dataset Creation	Sun Apr 23 16:35:12 2017

Temperature Calibration Report

Serial Number: 10025093
Tool Model: PRT_016
Performed: Sun Oct 11 12:31:14 2015

Point #	Reading		Reference	
1	13006.00	cps	68.00	degF
2	18181.00	cps	104.00	degF
3	29634.00	cps	176.00	degF
4	41077.00	cps	248.00	degF
5	52560.00	cps	320.00	degF
6	58409.00	cps	356.00	degF
7		cps		degF
8		cps		degF
9		cps		degF
10		cps		degF

Gamma Ray Calibration Report

Serial Number: 10019371
Tool Model: UW_PGR_020
Performed: (Not Performed)

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 1.0000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: 10012639
Tool Model: UW_RBT_004

Calibration Casing Diameter: 4.500 in
Calibration Depth: 329.048 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.023	1.315	0.800	81.196	62.225	-0.635
5FT	0.002	1.043	0.800	81.196	77.203	0.644
S1	0.023	1.284	0.000	100.000	79.267	-1.814
S2	0.021	1.235	0.000	100.000	82.403	-1.769
S3	0.023	1.266	0.000	100.000	80.443	-1.816
S4	0.025	1.337	0.000	100.000	76.182	-1.885
S5	0.026	1.412	0.000	100.000	72.132	-1.844
S6	0.025	1.458	0.000	100.000	69.768	-1.746
S7	0.027	1.421	0.000	100.000	71.736	-1.961
S8	0.026	1.347	0.000	100.000	75.746	-2.001

Company	TEP ROCKY MOUNTAIN LLC.
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