RELIANCE
OILFIELD SERVICES

Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Federal PA 433-26
Field	Parachute
County	Garfield
State	Colorado

Company TEP Rocky Mountain LLC
Well Federal PA 433-26
Field Parachute
County Garfield State Colorado
Location: API # : 05-045-23729
SEC 26 TWP 6S RGE 95W

Other Services
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Permanent Datum	Ground Level	Elevation 5636.9'	Elevation K.B. 5660.9' D.F. 5659.9' G.L. 5636.9'
Log Measured From	Kelly Bushing	24 FT	
Drilling Measured From	Kelly Bushing		

Date	26-JUN-2018
Run Number	One
Depth Driller	8470 FT
Depth Logger	8405 FT
Bottom Logged Interval	8390 FT
Top Log Interval	Surface
Open Hole Size	8.750"
Type Fluid	Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	232°F
Estimated Cement Top	See Log
Time Well Ready	ROA
Time Logger on Bottom	10:45
Equipment Number	HD-0359
Location	Grand Junction, CO
Recorded By	Z. Fisher
Witnessed By	Dustin 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	32.3	H-40	Surface	1124 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	8430 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 4117-4138 FT
Log ran from 8390 FT to Surface
Recorded with 0 PSI Surface Induced Pressure

Thank you for choosing Reliance Oilfield Services, LLC!

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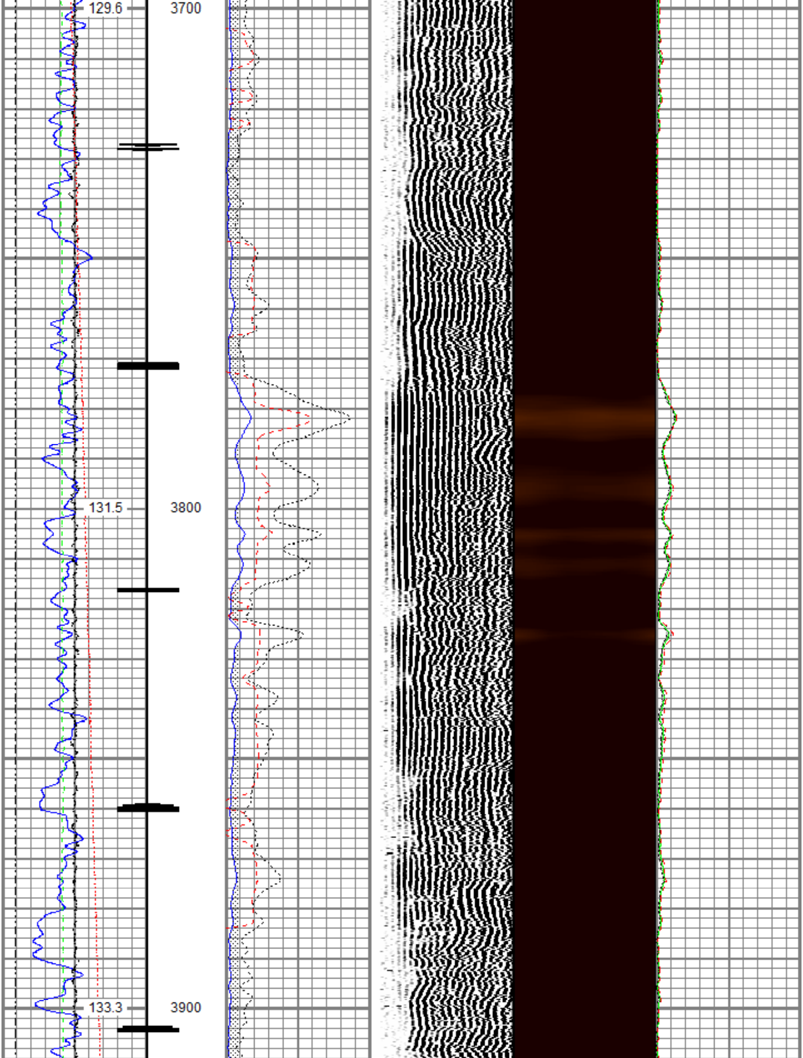
Main Pass

Recorded with 0 PSI Surface Induced Pressure

Database File	tep\tep_federal pa 433-26_rbl_06-26-18\tep_federal pa 433-26_rbl_06-26-18.db
Dataset Pathname	main
Presentation Format	ros_rbt004_tep
Dataset Creation	Tue Jun 26 11:45:49 2018
Charted by	Depth in Feet scaled 1:240

Curve	Left	Unit	Right
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
Casing Collar Locator			
3' Amplitude	0	(mV)	100
3' Amplitude x 5	0	(mV)	20
3' Travel Time	300	(usec)	200
5' Variable Density Log	200	(usec)	1200
Sector Map			
Average Amplitude	0		150
Mimimum Amplitude	0		150
Maximum Amplitude	0		150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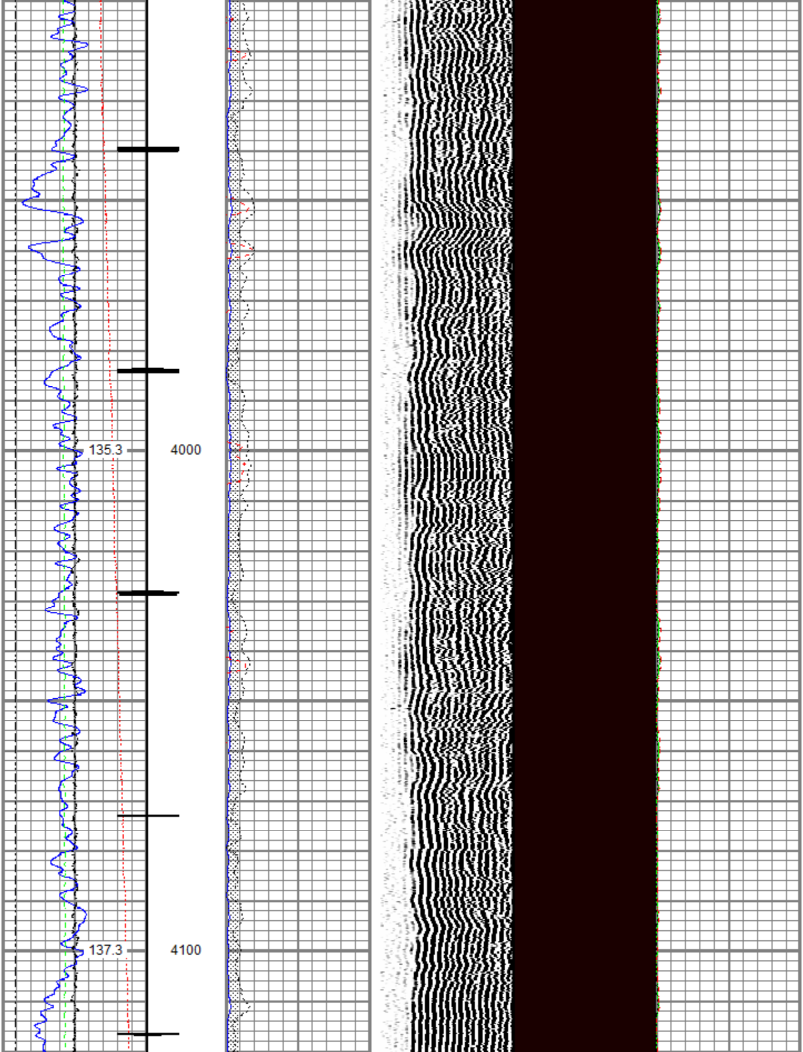
131.5
3800
133.3
3900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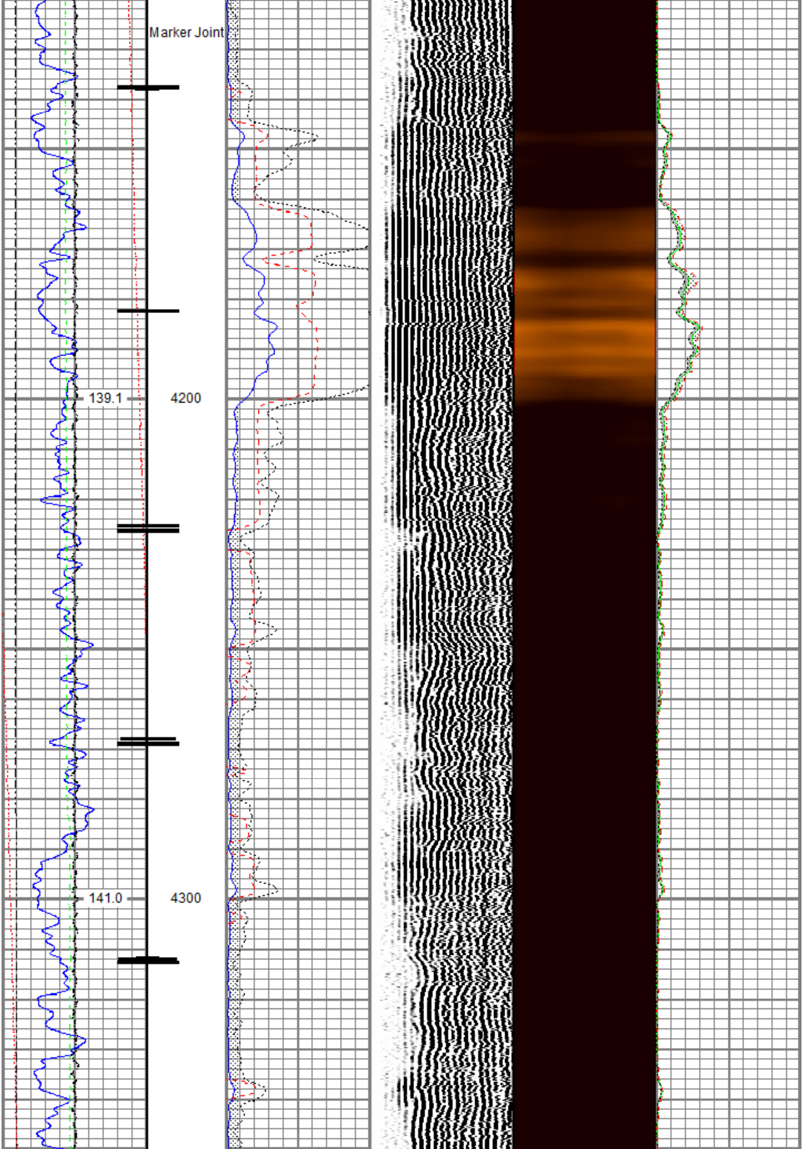
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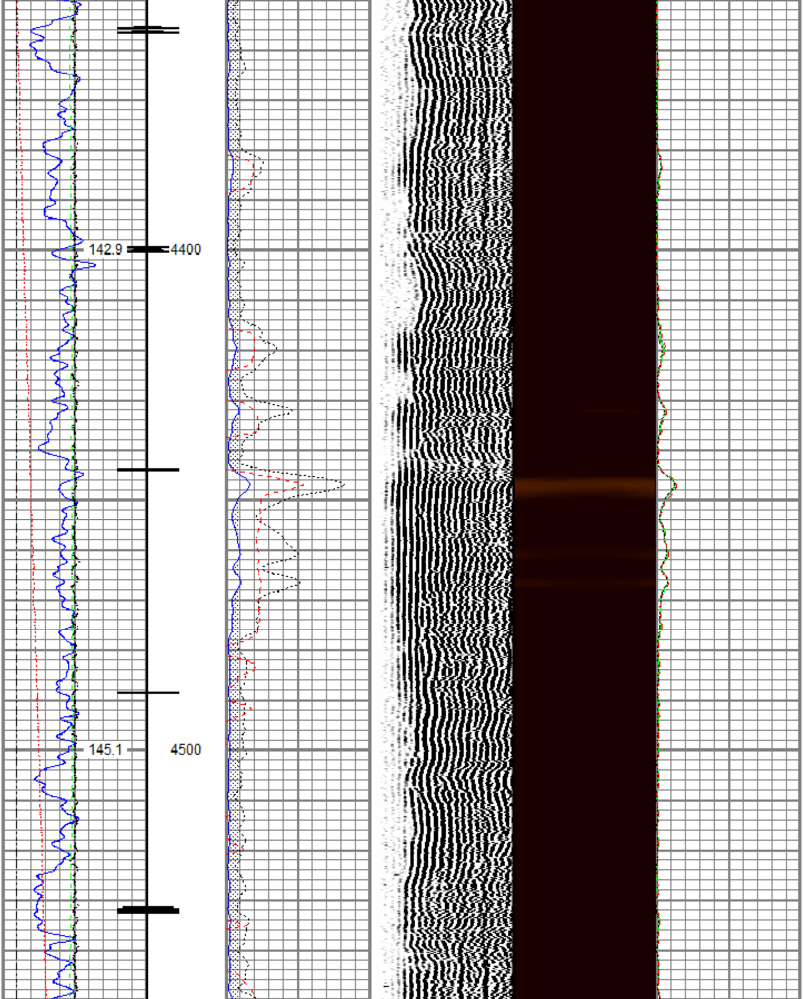
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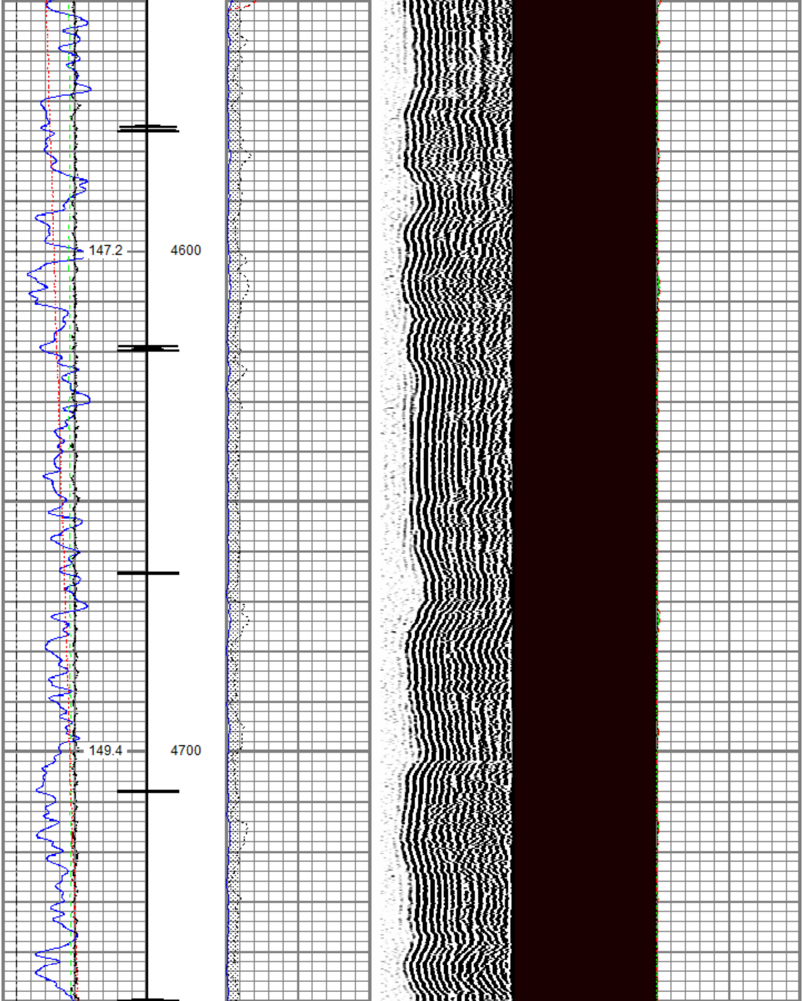
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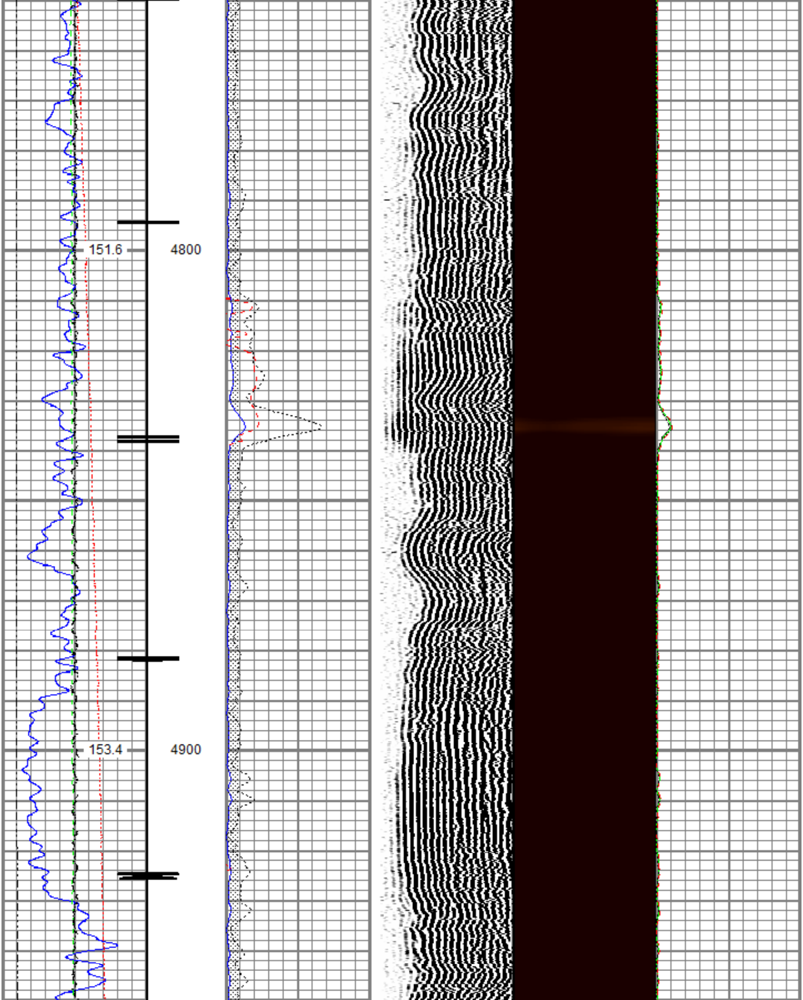
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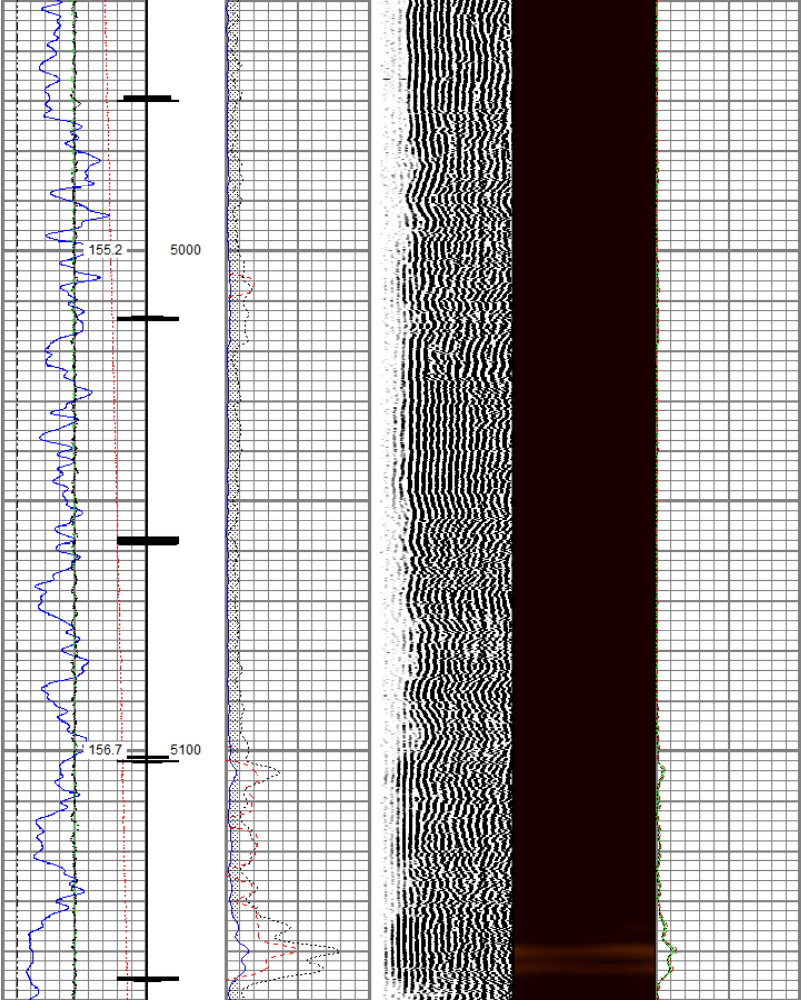
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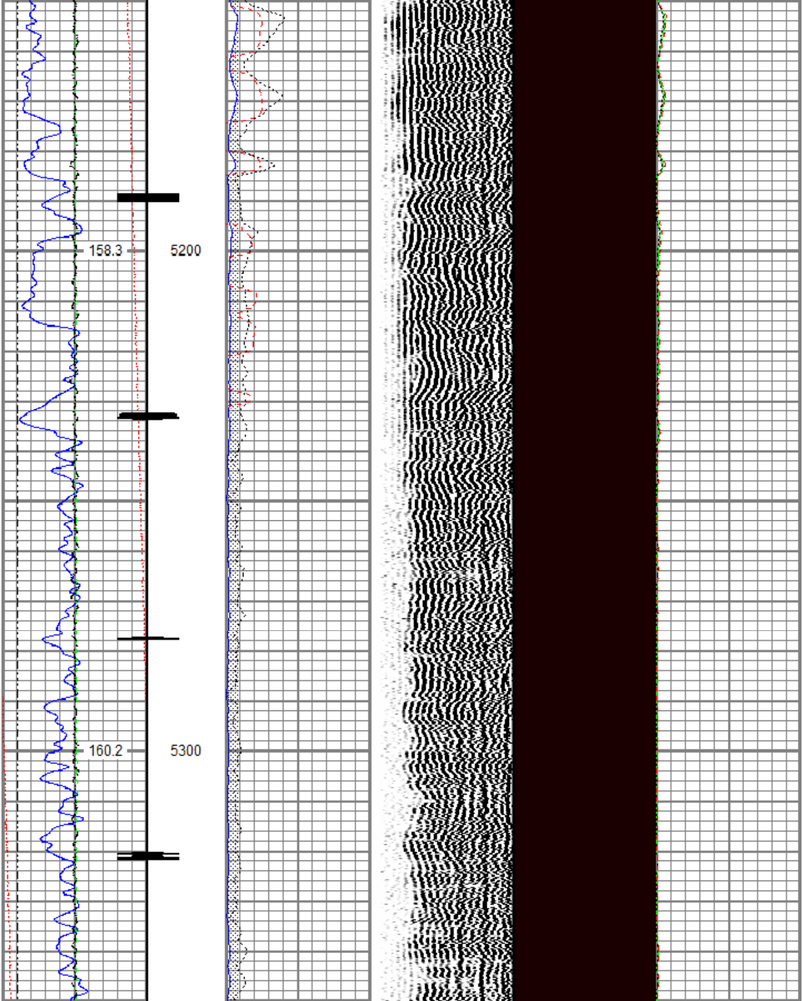
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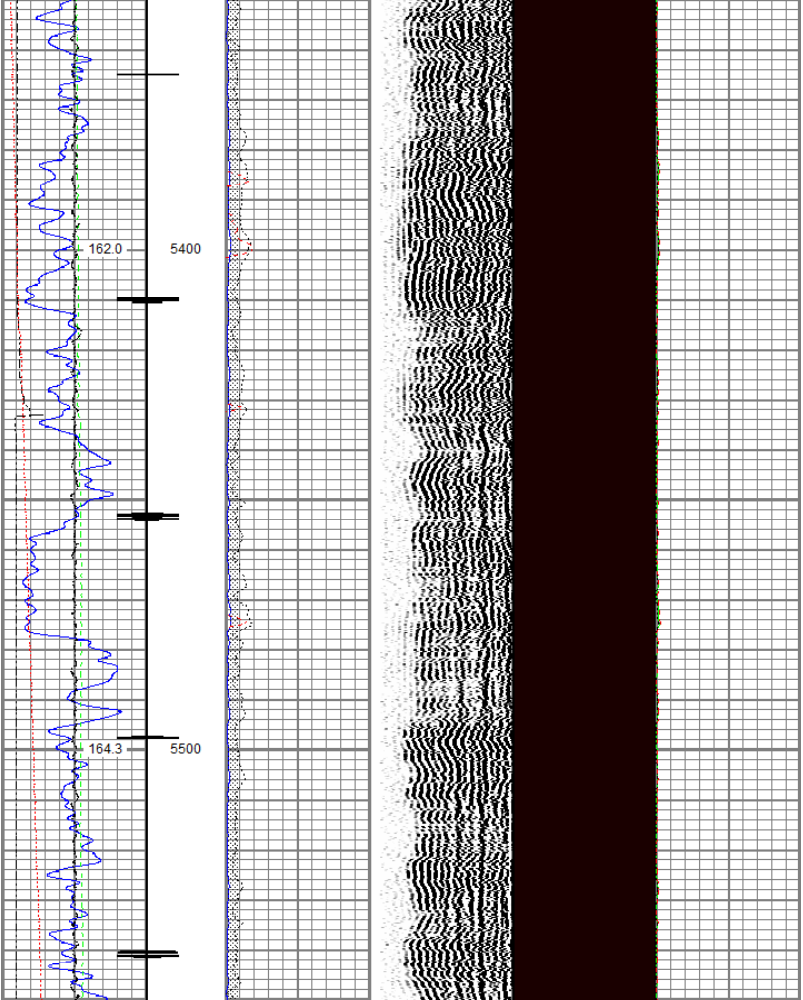
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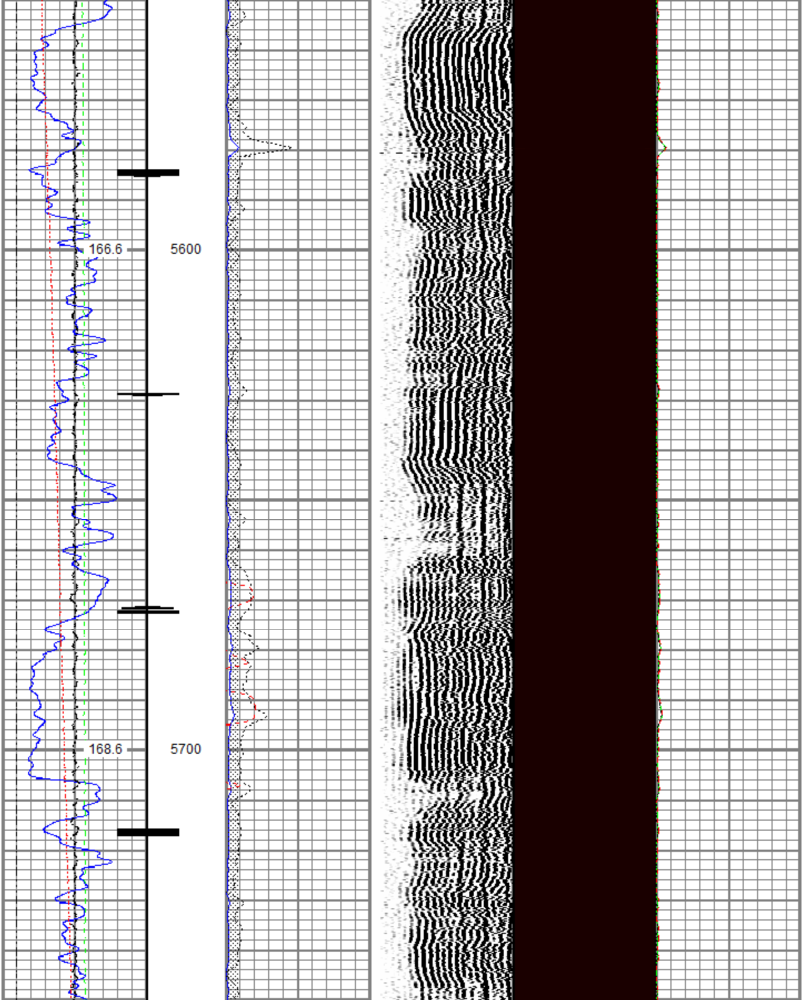
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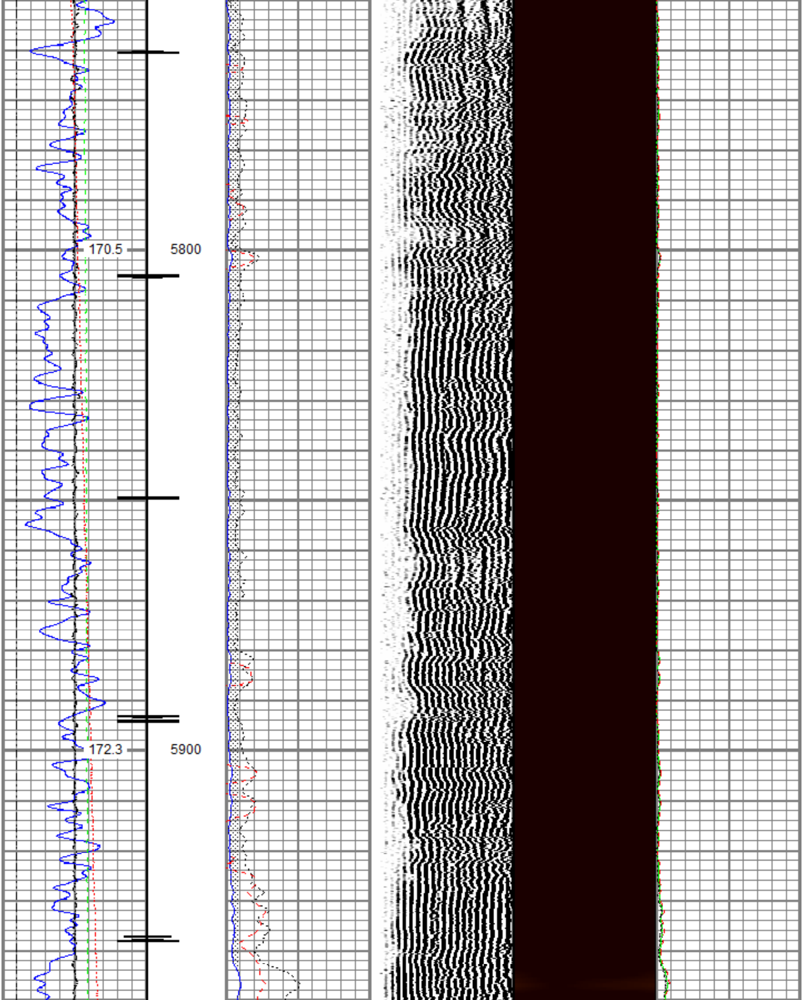
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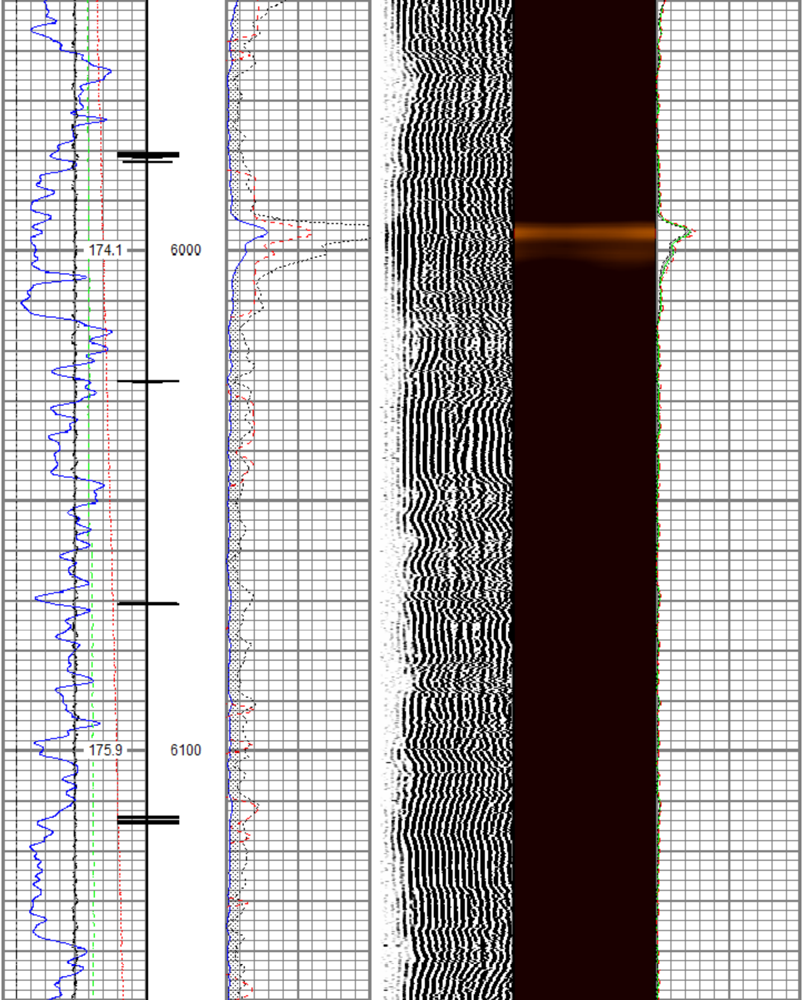
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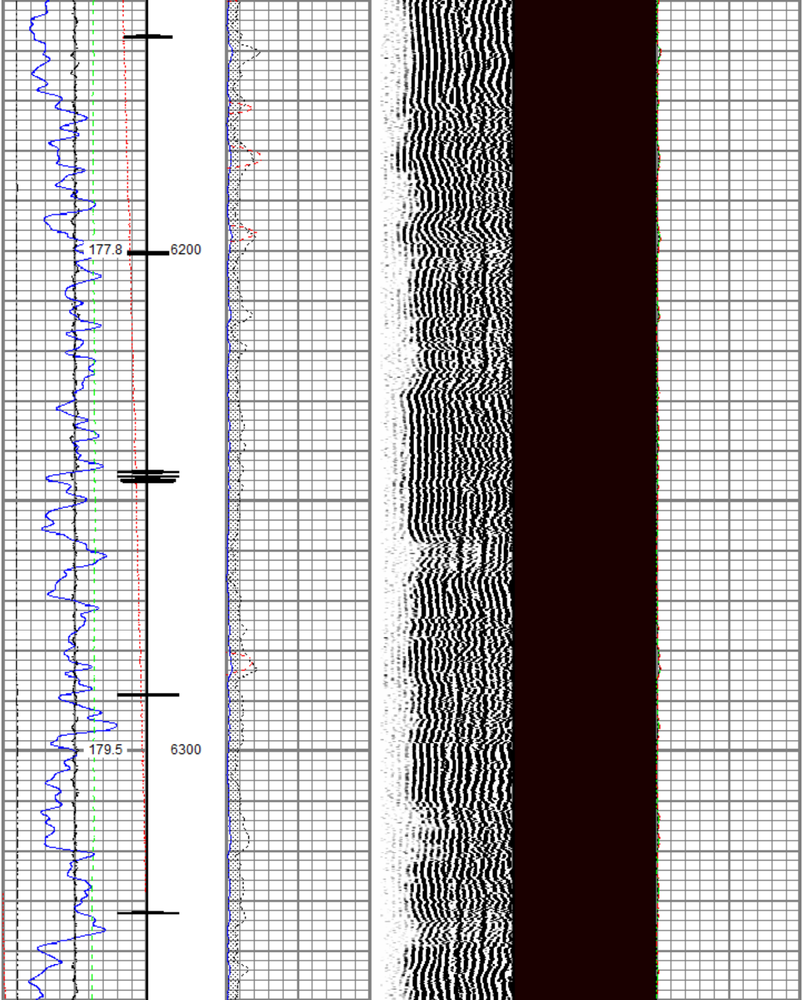
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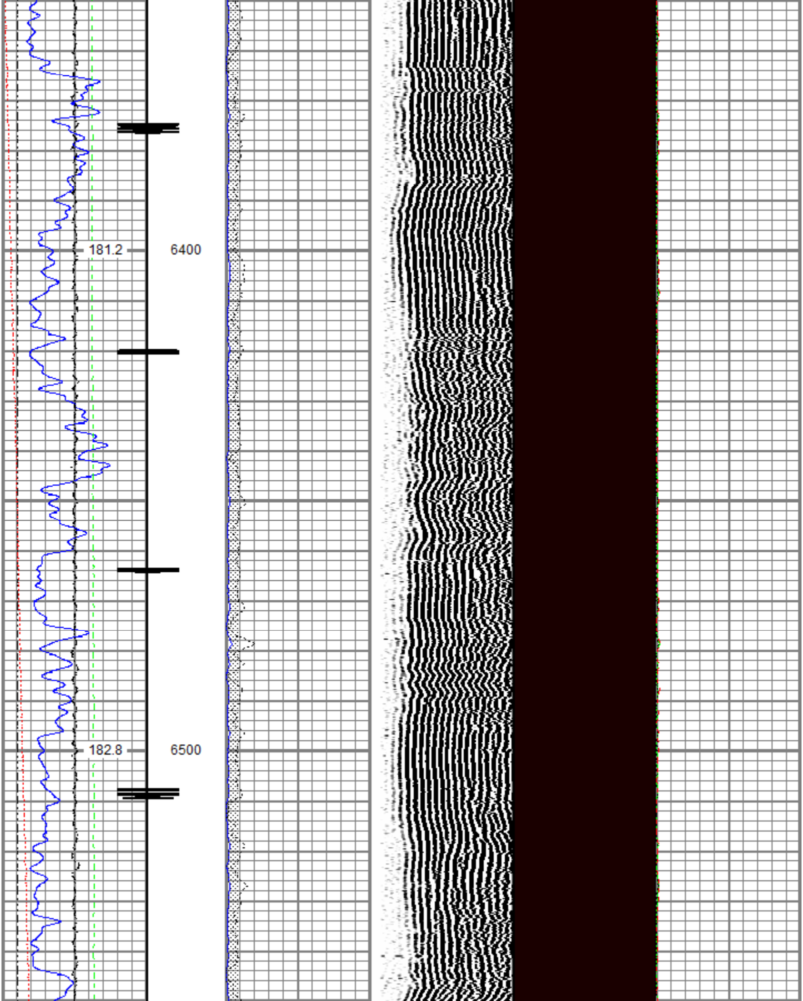
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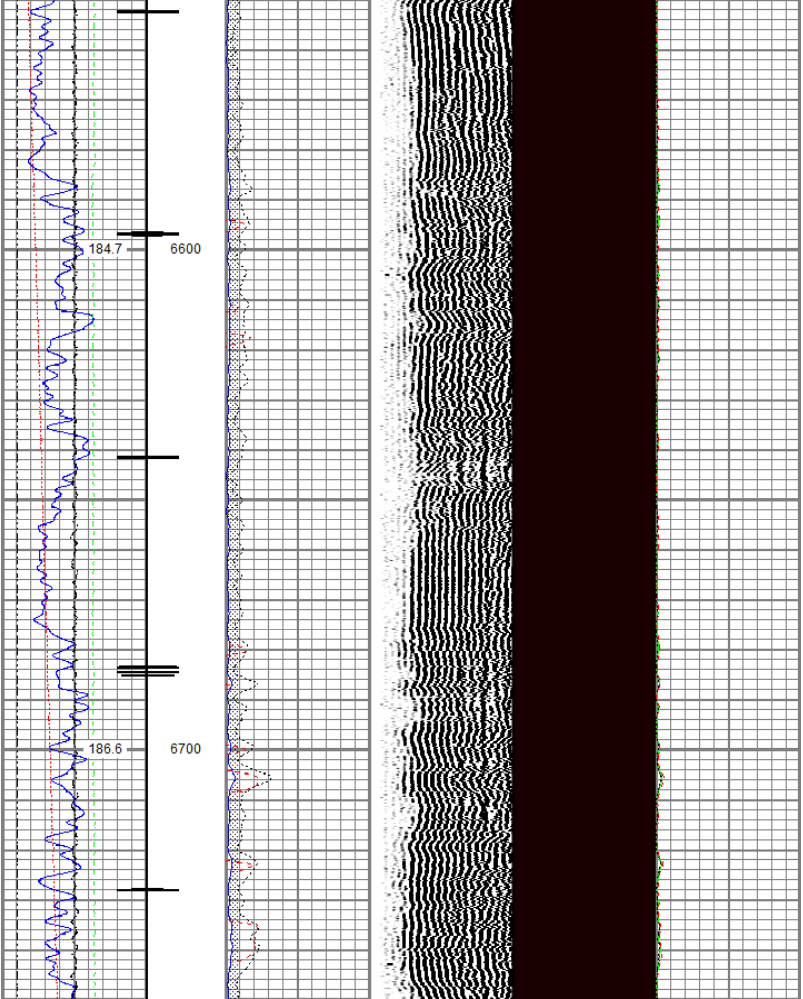
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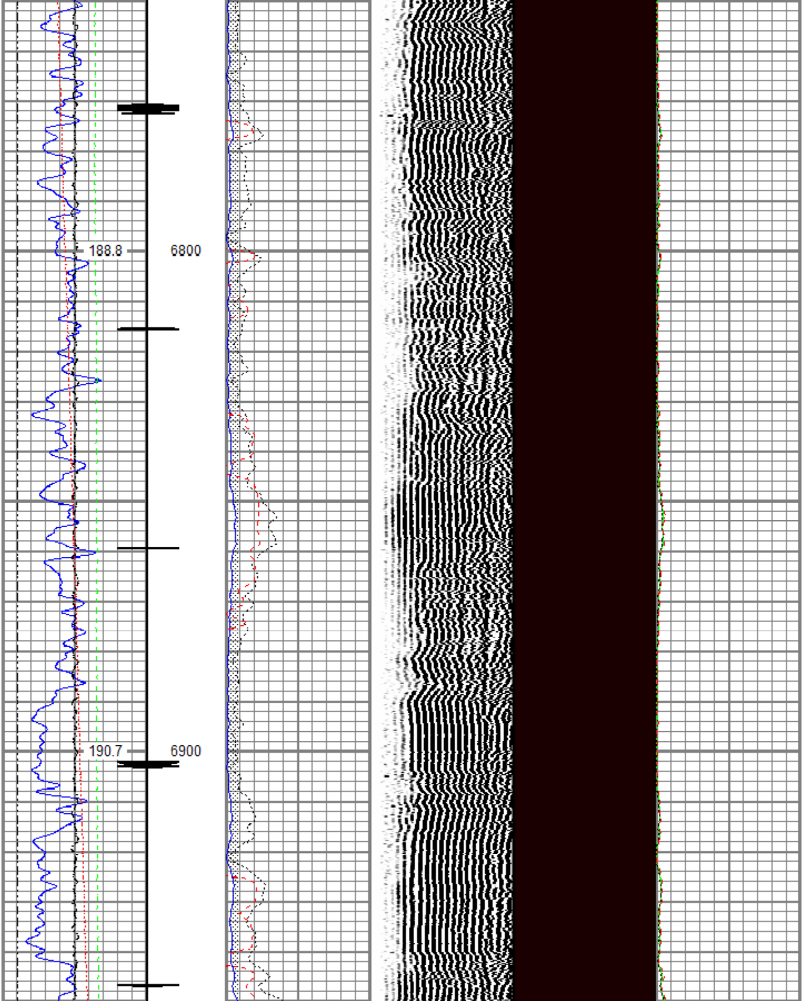
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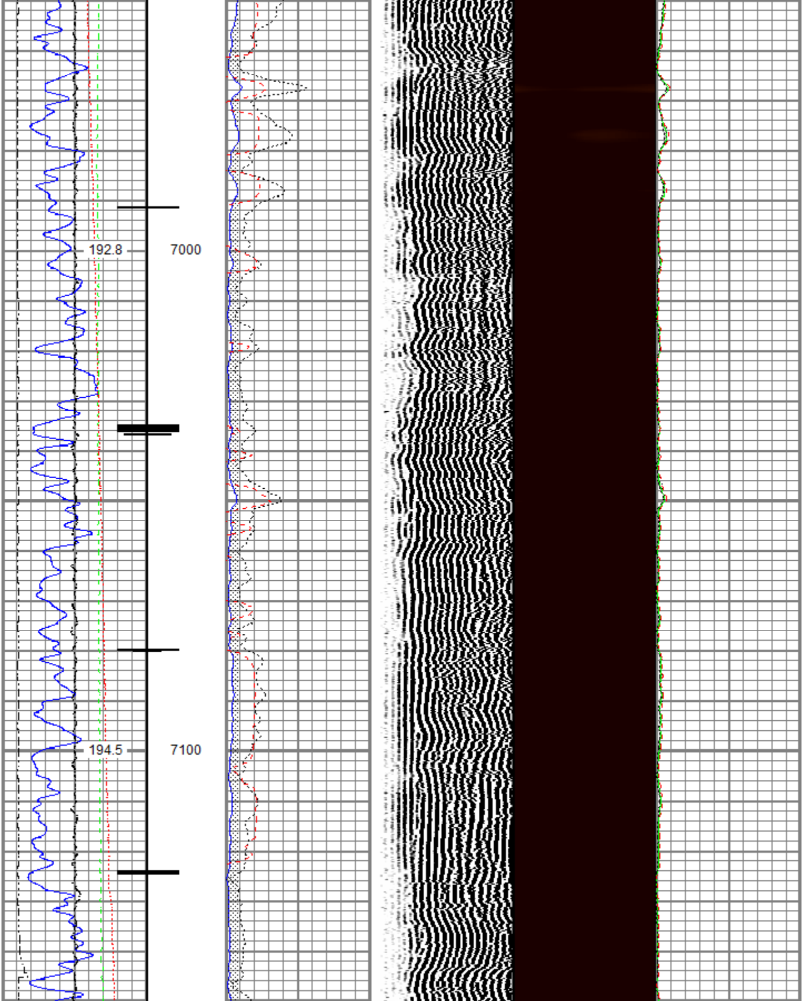
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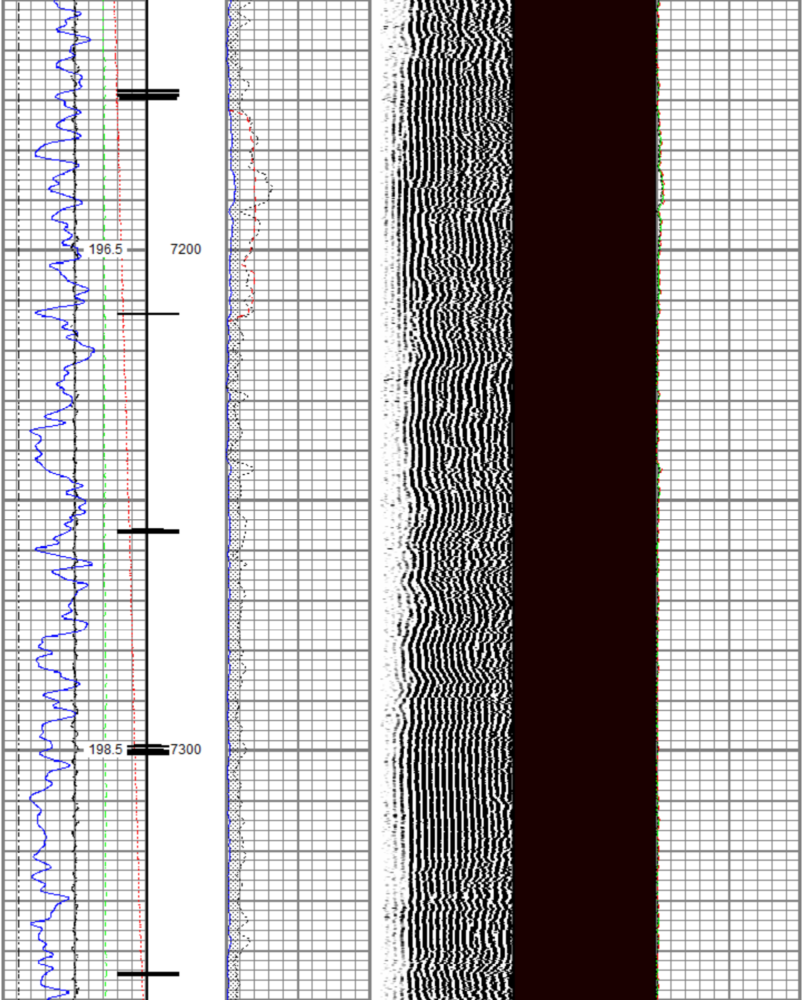
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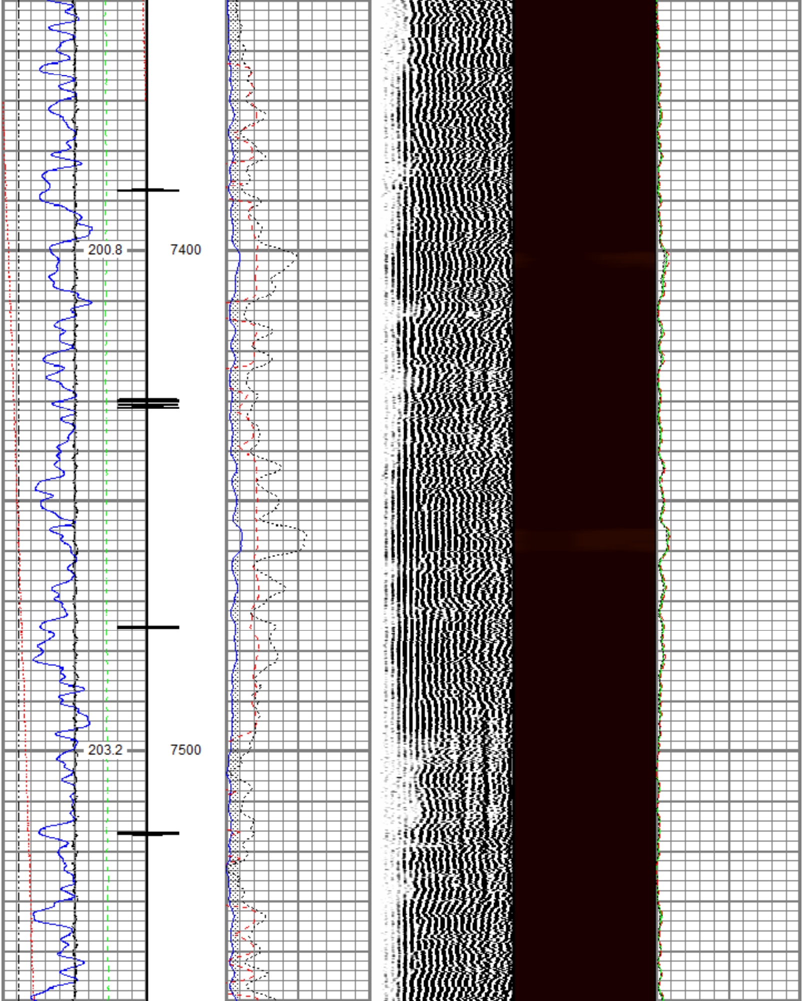
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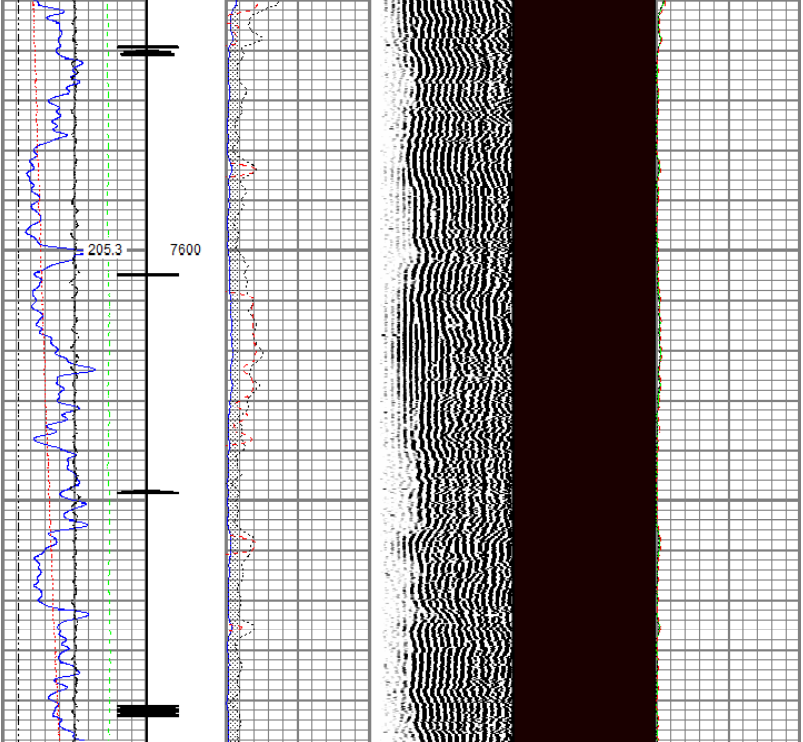
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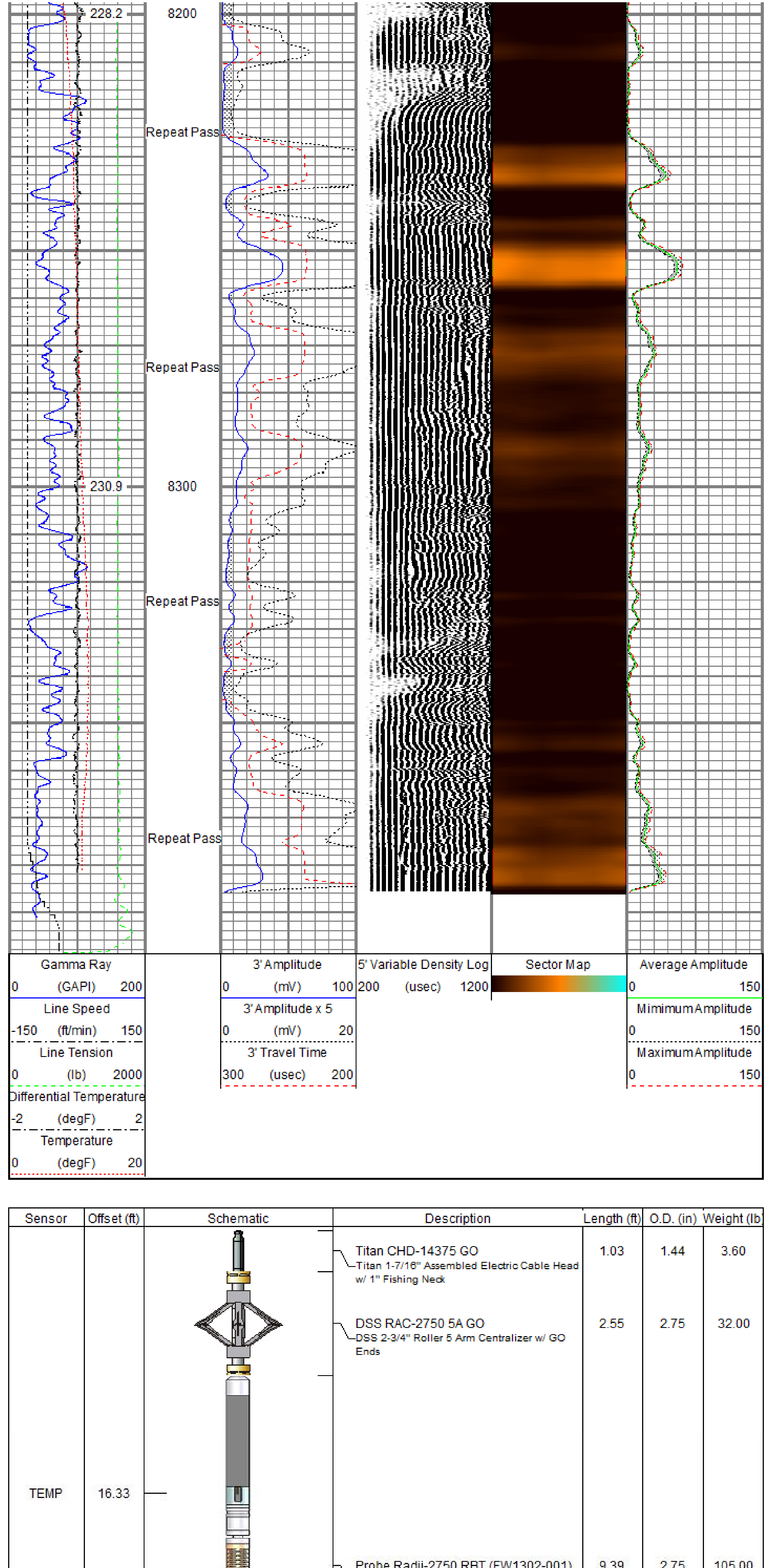
Repeat Pass

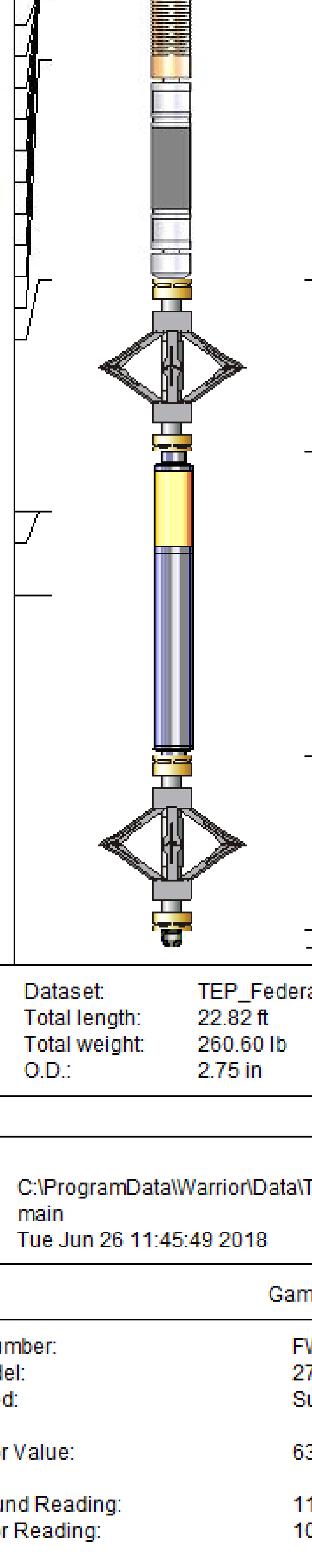
Recorded with 0 PSI Surface Induced Pressure

Database File	tep\tep_federal pa 433-26_rbl_06-26-18\tep_federal pa 433-26_rbl_06-26-18.db
Dataset Pathname	repeat
Presentation Format	ros_rbt004_tep
Dataset Creation	Tue Jun 26 11:42:41 2018
Charted by	Depth in Feet scaled 1:240



Sensor	Offset (ft)
TEMP	16.33
WVFS8	14.10
WVFS7	14.10
WVFS6	14.10
WVFS5	14.10
WVFS4	14.10
WVFS3	14.10
WVFS2	14.10
WVFS1	14.10
WVFCAL	14.10
WVF3FT	14.10
WVF5FT	13.10
HEADVOLT	9.85
CCL$2	6.42
CCL$1	6.42
GR	5.18

Schematic



Description	Length (ft)	O.D. (in)	Weight (lb
Titan CHD-14375 GO Titan 1-7/16" Assembled Electric Cable Head w/ 1" Fishing Neck	1.03	1.44	3.60
DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends	2.55	2.75	32.00
Probe Radii-2750 RBT (FW1302-001) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends	2.55	2.75	32.00
Probe GR-CCL-2750 GOB (FW1307-038) Probe 2-3/4" rev.2 Digital Scintillation Gamma Ray/CCL Combined	4.51	2.75	55.00
DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends	2.55	2.75	32.00
GO BN-14375 GO 1-7/16" Bull Nose with Go Box Top	0.25	1.44	1.00

Dataset: TEP_Federal PA 433-26_RBL_06-26-18.db: field/well/run1/main
Total length: 22.82 ft
Total weight: 260.60 lb
O.D.: 2.75 in

Calibration Report

Database File C:\ProgramData\Warrior\Data\TEP\TEP_Federal PA 433-26_RBL_06-26-18\TEP_Federal PA 433-26_RBL_
Dataset Pathname main
Dataset Creation Tue Jun 26 11:45:49 2018

Gamma Ray Calibration Report

Serial Number:	FW1307-038	
Tool Model:	2750 GOB	
Performed:	Sun Nov 12 11:44:12 2017	
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:	FW1302-001	
Tool Model:	2750 RBT	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	6492.864	ft

Master Calibration, performed Tue Jun 26 08:06:33 2018:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.003	0.750	0.800	81.196	106.736	1.104
CAL	-0.005	0.757				
5'	0.006	0.610	0.800	81.196	133.097	0.001
SUM						
S1	-0.003	0.764	0.000	100.000	130.375	0.395
S2	-0.003	0.776	0.000	100.000	128.275	0.446
S3	-0.003	0.769	0.000	100.000	129.555	0.408
S4	-0.003	0.741	0.000	100.000	134.328	0.415
S5	-0.003	0.700	0.000	100.000	142.153	0.474
S6	-0.003	0.692	0.000	100.000	143.962	0.376
S7	-0.003	0.725	0.000	100.000	137.424	0.414
S8	-0.004	0.753	0.000	100.000	132.125	0.506

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.005	0.757	1.000	0.000

Air Zero Calibration, performed Tue Jun 26 08:06:54 2018:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	-0.003	0.000	-0.000
5'	0.006	0.000	0.000
SUM			
S1	-0.002	0.000	-0.001
S2	-0.002	0.000	-0.002
S3	-0.003	0.000	-0.000
S4	-0.002	0.000	-0.001
S5	-0.003	0.000	-0.001
S6	-0.002	0.000	-0.000
S7	-0.002	0.000	-0.001
S8	-0.002	0.000	-0.002

Temperature Calibration Report

Serial Number:	FW1302-001	
Tool Model:	2750 RBT	
Performed:	Sun Nov 12 12:24:58 2017	
	Reference	Reading
Low Reference:	100.00 degF	107.47 degF
High Reference:	350.00 degF	404.08 degF
Gain:	0.84	
Offset:	9.42	
Delta Spacing:	1	

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