RELIANCE
OILFIELD SERVICES

Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Federal SG 314-15
Field	Grand Valley
County	Garfield
State	Colorado

Company TEP Rocky Mountain LLC
Well Federal SG 314-15
Field Grand Valley
County Garfield State Colorado
Location: API #: 05-045-24127
SEC 22 TWP 7S RGE 96W

Other Services

Permanent Datum	Ground Level	Elevation 6090.8'	Elevation
Log Measured From	Kelly Bushing	24 FT	K.B. 6114.8'
			D.F. ---
Drilling Measured From	Kelly Bushing		G.L. 6090.8'

Date	21-FEB-2019
Run Number	One
Depth Driller	6731 FT
Depth Logger	6666 FT
Bottom Logged Interval	6652 FT
Top Log Interval	Surface
Open Hole Size	---
Type Fluid	Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	184°F
Estimated Cement Top	See Log
Time Well Ready	ROA
Time Logger on Bottom	15:40
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	1028 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	6690 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 3321-3343 FT
Log ran from 6652 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_federal sg 314-15_rbl_02-21-19\tep_federal sg 314-15_rbl_02-21-19.db
Dataset Pathname	main.1
Presentation Format	ros_rbt004_tep
Dataset Creation	Fri Feb 22 19:08:47 2019
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				
10 CCL 0				

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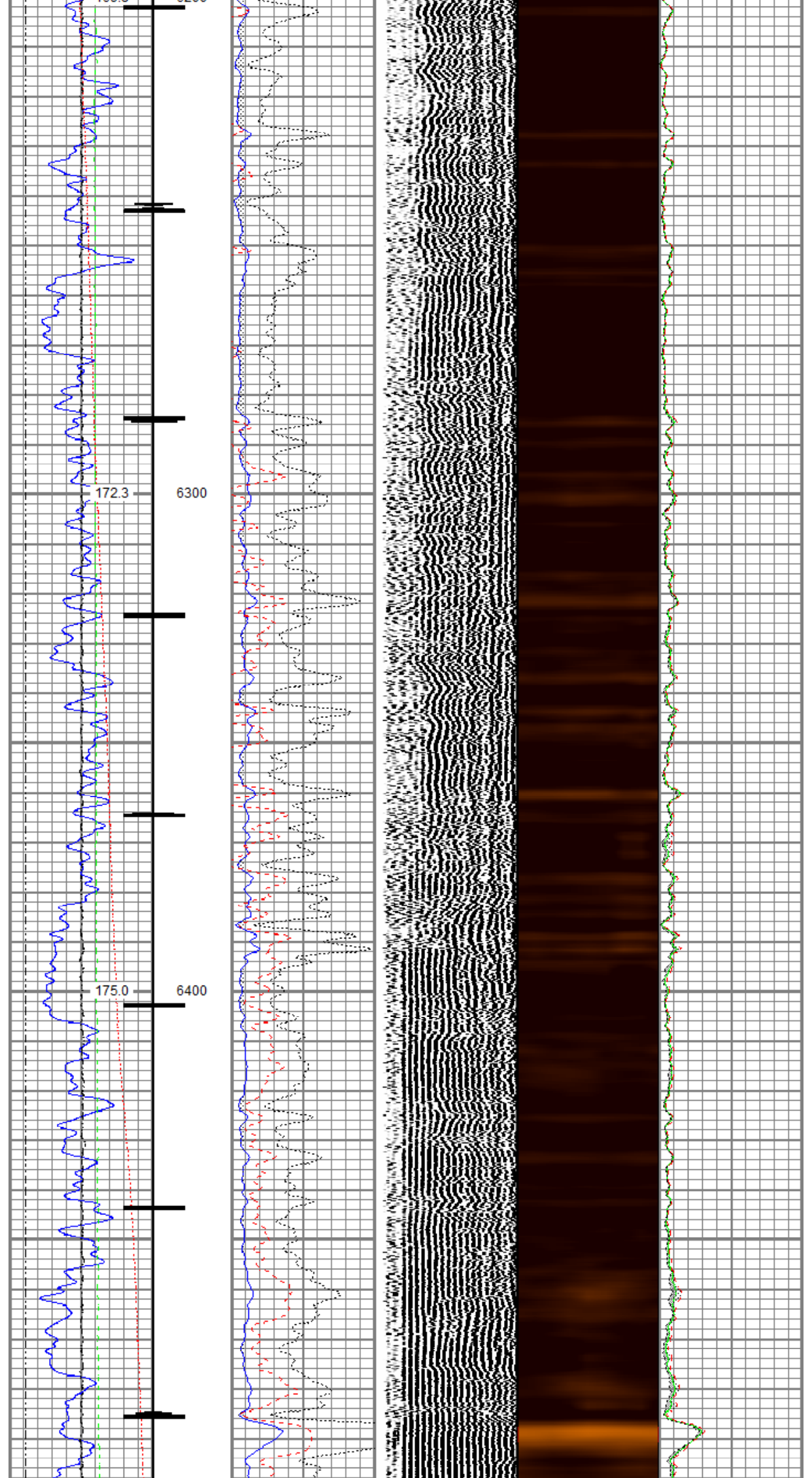
Line Speed -150 (ft/min) 150	3' Amplitude x 5 0 (mV) 20			Mimimum Amplitude 0 150
Line Tension 0 (lb) 2000	3' Travel Time 300 (usec) 200			Maximum Amplitude 0 150
Differential Temperature -2 (degF) 2				
Temperature 0 (degF) 20				
10 CCL 0				

Repeat Pass

Recorded With 0 PSI Surface Induced Pressure

Database File	tep_federal sg 314-15_rbl_02-21-19\tep_federal sg 314-15_rbl_02-21-19.db
Dataset Pathname	repeat.1
Presentation Format	ros_rbt004_tep
Dataset Creation	Fri Feb 22 20:48:32 2019
Charted by	Depth in Feet scaled 1:240

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				



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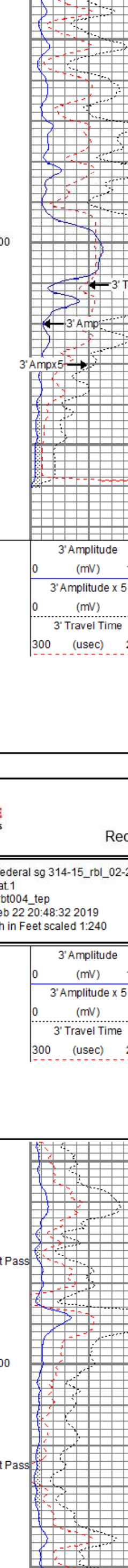
Line Tension 0 (lb) 2000	3' Travel Time 300 (usec) 200			Maximum Amplitude 0 150
Differential Temperature -2 (degF) 2				
Temperature 0 (degF) 20				



Sensor	Offset (ft)	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
TEMP	16.33				
WVFS8	14.10	Probe Radii-2750 RBT (101013) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
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				
		DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends	2.55	2.75	32.00
CCL$2	6.42				
CCL$1	6.42				
GR	5.18	Probe GR-CCL-2750 GOB (FW1211-081) 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 sg 314-15_rbl_02-21-19.db: field/well/run1/main.1
Total length:	22.82 ft
Total weight:	260.60 lb
O.D.:	2.75 in

Calibration Report

Database File	c:\programdata\warrior\data\tep_federal sg 314-15_rbl_02-21-19\tep_federal sg 314-15_rbl_02-21-19.db
Dataset Pathname	main.1
Dataset Creation	Fri Feb 22 19:08:47 2019

Gamma Ray Calibration Report

Serial Number:	FW1211-081	
Tool Model:	2750 GOB	
Performed:	Sun Nov 12 12:22:44 2017	
Calibrator Value:	637.0	GAPI
Background Reading:	112.4	cps
Calibrator Reading:	1008.7	cps
Sensitivity:	0.7107	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	101013	
Tool Model:	2750 RBT	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	33.805	ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.000	0.999	0.800	81.196	80.411	0.836
CAL	0.018	0.754				
5'	-0.001	0.732	0.800	81.196	109.716	0.894
SUM						
S1	-0.007	1.008	0.000	100.000	98.583	0.642
S2	-0.003	1.000	0.000	100.000	99.716	0.321
S3	-0.001	1.028	0.000	100.000	97.151	0.142
S4	-0.001	1.055	0.000	100.000	94.629	0.140
S5	-0.005	1.094	0.000	100.000	91.024	0.426
S6	-0.005	1.073	0.000	100.000	92.689	0.505
S7	-0.003	1.022	0.000	100.000	97.571	0.259
S8	-0.003	1.006	0.000	100.000	99.157	0.268

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.018	0.754	1.000	0.000

Air Zero Calibration, performed Thu Feb 21 15:18:47 2019:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	-0.007	0.000	-0.000
5'	-0.003	0.000	-0.000
SUM			
S1	-0.007	0.000	-0.000
S2	-0.005	0.000	-0.000
S3	-0.005	0.000	-0.000
S4	-0.005	0.000	-0.000
S5	-0.004	0.000	-0.001
S6	-0.004	0.000	-0.000
S7	-0.004	0.000	-0.000
S8	-0.005	0.000	-0.000

Temperature Calibration Report

Serial Number:	101013	
Tool Model:	2750 RBT	
Performed:	Sun Nov 12 13:21:13 2017	
	Reference	Reading
Low Reference:	100.00 degF	112.30 degF
High Reference:	350.00 degF	394.75 degF
Gain:	0.89	
Offset:	0.60	
Delta Spacing	1	

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