RELIANCE OILFIELD SERVICES

Pulsed Neutron Gamma Ray Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Federal GM 413-4
Field	Grand Valley
County	Garfield
State	Colorado

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Location: API # : 05-045-23503
SEC 5 TWP 7S RGE 96W

Other Services
RBL

Permanent Datum	Ground Level	Elevation	5977'
Log Measured From	Kelly Bushing	24 FT	
Drilling Measured From	Kelly Bushing		

Elevation
K.B. 6001'
D.F. 6000'
G.L. 5977'

Date	31-OCT-2017
Run Number	One
Depth Driller	7167 FT
Depth Logger	7123 FT
Bottom Logged Interval	7116 FT
Top Log Interval	3489 FT
Open Hole Size	8.750"
Type Fluid	Fresh Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	---
Estimated Cement Top	---
Time Well Ready	---
Time Logger on Bottom	---
Equipment Number	---
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	1079 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	7121 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 Reliance Bond Log dated 28-OCT-2017
Log ran from 7116 FT to 3489 FT
PDN data logged with Anteres Pulsed Neutron Tool

Thank you for choosing Reliance Oilfield Services, LLC!!

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Main Pass

Database File	tep\gm 413-4\pdn\tep_federal gm 413-4_pdn_10-31-17.db
Dataset Pathname	federal_gm_413-4_pdn_main_shift
Presentation Format	ros_pdn
Dataset Creation	Wed Nov 01 13:22:43 2017
Charted by	Depth in Feet scaled 1:240

0 Gamma Ray (GAPI) 150
Casing Collar Locator
0 Line Speed (ft/min) 100
0 SSIN (cps) 500000

10 RATIO 0
60 SIGMA (cu) 0
0.35 RATIC 0
11 RATIN 0

0 LS (cps) 0000
SS
0 (cps4e+006

0 Gamma Ray (GAPI) 150
Casing Collar Locator
0 Line Speed (ft/min) 100
0 SSIN (cps) 500000

10 RATIO 0
60 SIGMA (cu) 0
0.35 RATIC 0
11 RATIN 0

0 LS (cps) 0000
SS
0 (cps4e+006

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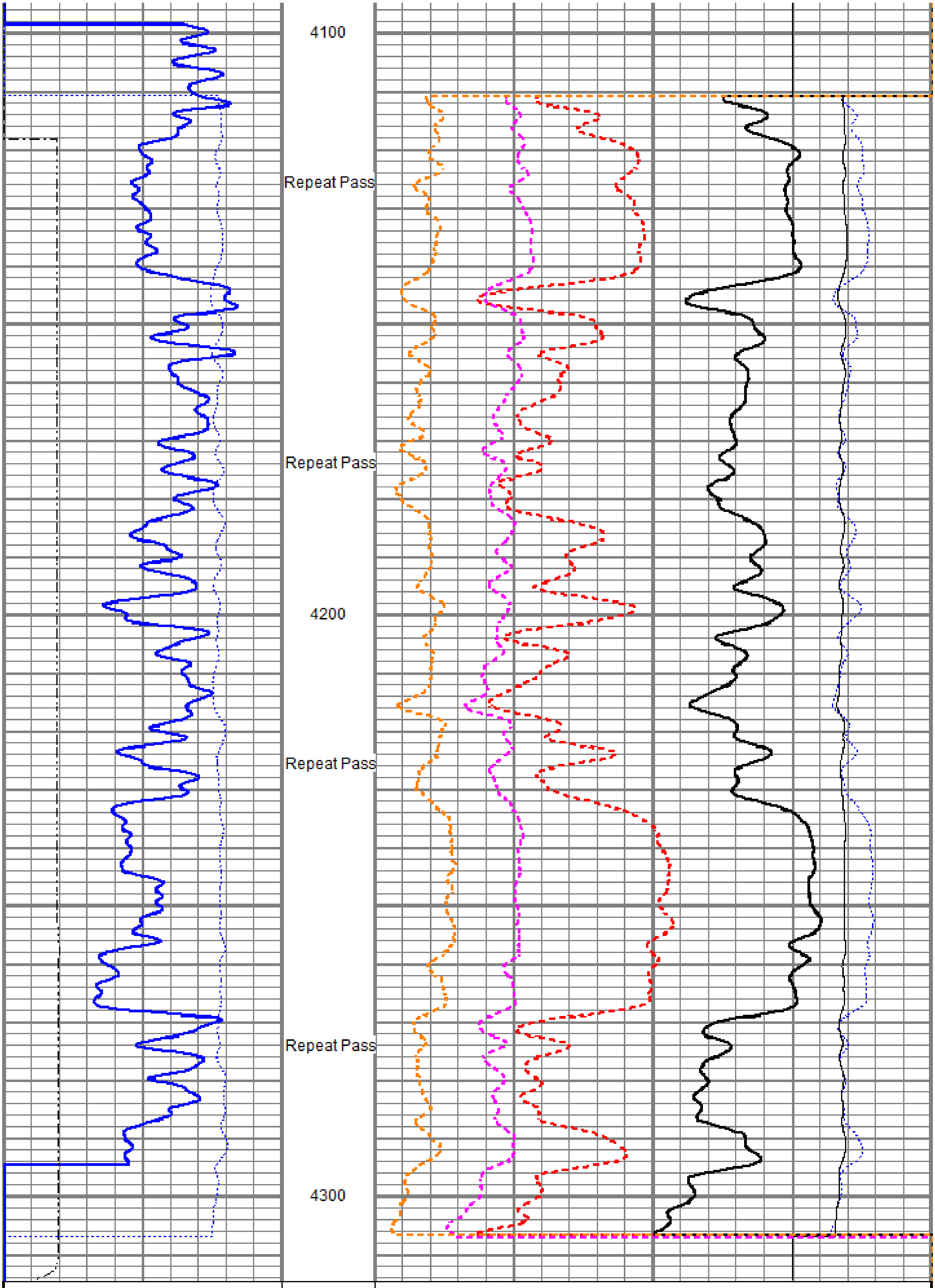
Repeat Pass

Database File	tep\gm 413-4\pdn\tep_federal gm 413-4_pdn_10-31-17.db
Dataset Pathname	repeat/federal_gm_413-4_pdn_repeat_shift
Presentation Format	ros_pdn
Dataset Creation	Wed Nov 01 14:36:41 2017
Charted by	Depth in Feet scaled 1:240

0 Gamma Ray (GAPI) 150
10 RATIO 0

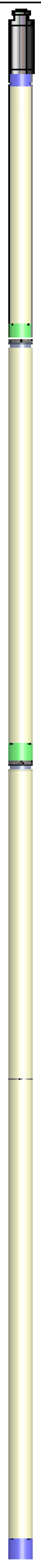
0 Line Speed (ft/min) 100
0 SSIN (cps) 500000

60 SIGMA (cu) 0
0.35 RATIC 0
11 RATIN 0
0 LS (cps) 0000
SS
0 (cps4e+006



0 Gamma Ray (GAPI) 150
0 Line Speed (ft/min) 100
0 SSIN (cps) 500000

10 RATIO 0
60 SIGMA (cu) 0
0.35 RATIC 0
11 RATIN 0
0 LS (cps) 0000
SS
0 (cps4e+006

Sensor	Offset (ft)	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
			Telemetry-Antares Antares Telemetry / Gamma / CCL	4.07	1.70	17.60
			Generator-Antares Antares Neutron Generator	19.03	1.70	85.80

Dataset:	pdn tool.db: field/well/run1/PDN_Tool_Diagram
Total length:	24.13 ft
Total weight:	108.80 lb
O.D.:	1.70 in

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