RELIANCE OILFIELD SERVICES

Pulsed Neutron Gamma Ray Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Federal SG 341-21
Field	Grand Valley
County	Garfield
State	Colorado

Company TEP Rocky Mountain LLC
Well Federal SG 341-21
Field Grand Valley
County Garfield State Colorado
Location: API # : 05-045-24133
SEC 22 TWP 7S RGE 96W
Other Services RBL

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

Date	05-APR-2019
Run Number	One
Depth Driller	6944 FT
Depth Logger	6877 FT
Bottom Logged Interval	6871 FT
Top Log Interval	3426 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	J. Donnelly
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	1031 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	6894 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 05-APR-2019
Log ran from 6871 FT to 3426 FT
Pulsed Neutron Data logged with the Hunter RAS Tool

Thank you for choosing Reliance Oilfield Services, LLC!!

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Main Pass

Database File	f:\data\tep\federal sg 341-21\pn\tep_federal sg 341-21_pn_04-05-19.db
Dataset Pathname	runSHIFTED/merge1
Presentation Format	ros_pdn_hunter
Dataset Creation	Sun Apr 07 11:27:43 2019
Charted by	Depth in Feet scaled 1:240

0 GR (GAPI) 150
Casing Collar Locator
-100 Line Speed (ft/min) 100
0 NIRS 400000
0 BKGN (cps) 4000
0 BKGF (cps) 2000

4 RNF2 0
60 SIGMA (cu) 0
4.5 RNFI 0
0 FIS2 45000
0 NIS2 100000

0 GR (GAPI) 150
Casing Collar Locator
-100 Line Speed (ft/min) 100
0 NIRS 400000
0 BKGN (cps) 4000
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0 NIS2 100000

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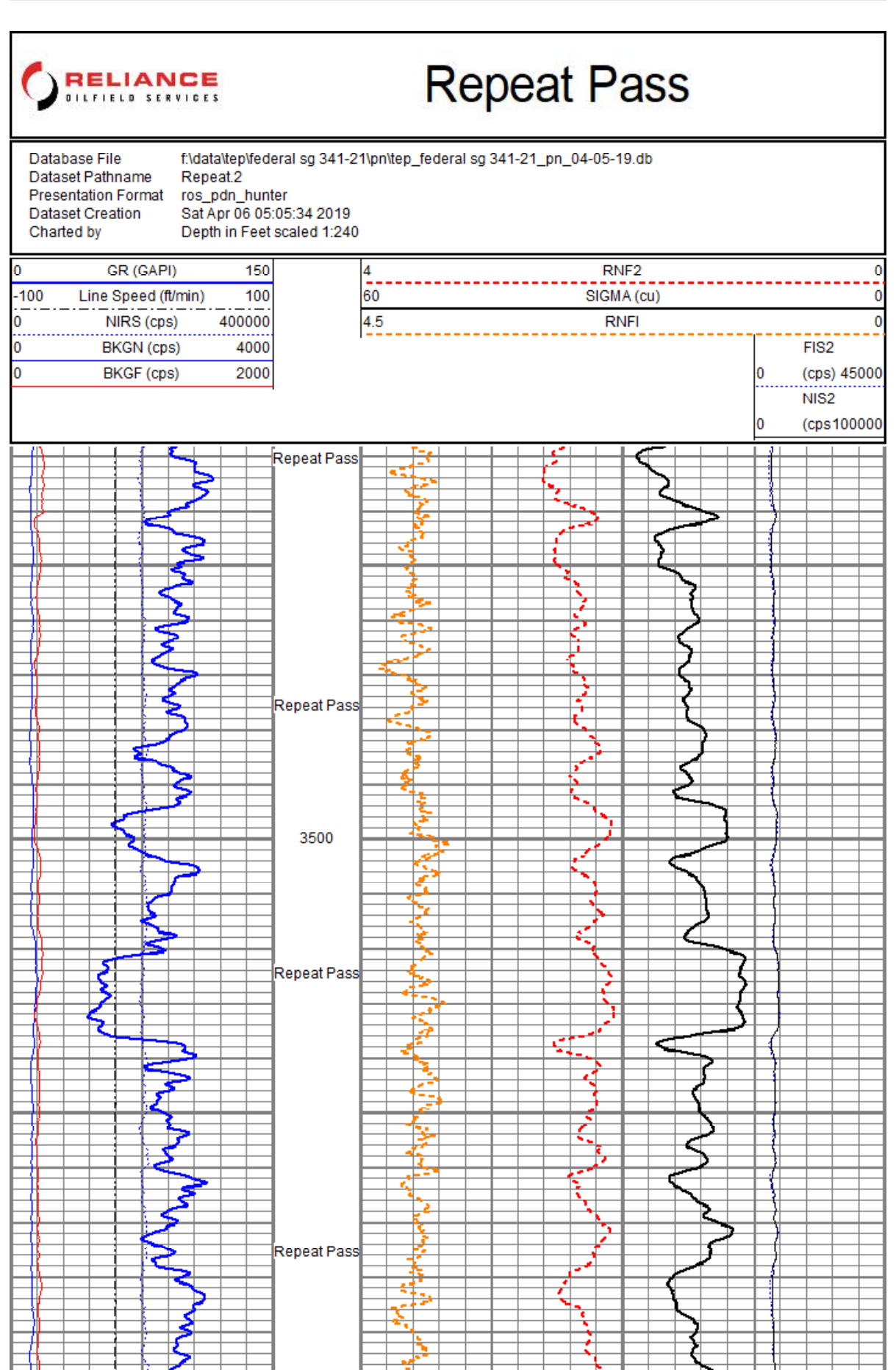
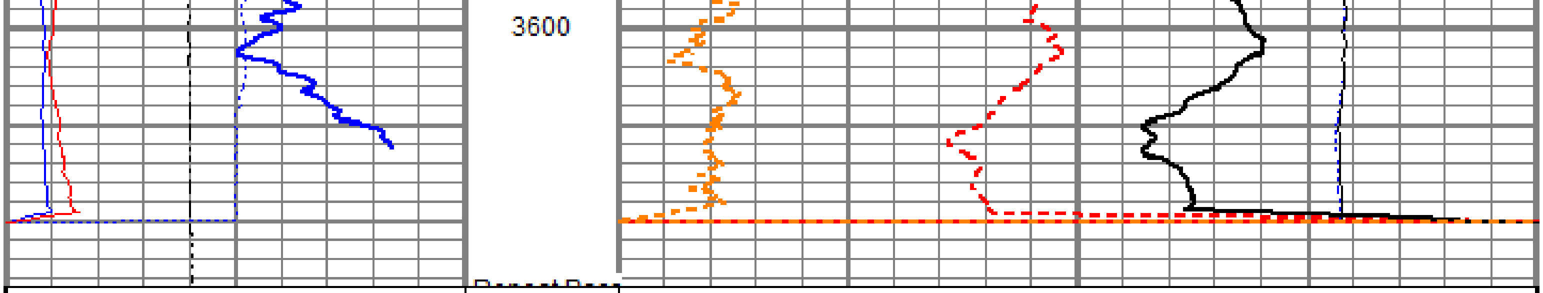
Repeat Pass

Database File	f:\data\tep\federal sg 341-21\pn\tep_federal sg 341-21_pn_04-05-19.db
Dataset Pathname	Repeat.2
Presentation Format	ros_pdn_hunter
Dataset Creation	Sat Apr 06 05:05:34 2019
Charted by	Depth in Feet scaled 1:240

0 GR (GAPI) 150
-100 Line Speed (ft/min) 100
0 NIRS (cps) 400000
0 BKGN (cps) 4000
0 BKGF (cps) 2000

4 RNF2 0
60 SIGMA (cu) 0
4.5 RNFI 0
FIS2
0 (cps) 45000
NIS2
0 (cps 100000

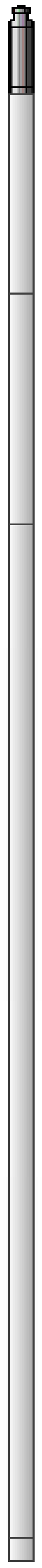




0	GR (GAPI)	150	
-100	Line Speed (ft/min)	100	
0	NIRS (cps)	400000	
0	BKGN (cps)	4000	
0	BKGF (cps)	2000	

4	RNF2	0
60	SIGMA (cu)	0
4.5	RNFI	0

	FIS2
0	(cps) 45000
	NIS2
0	(cps100000

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Titan CHD-16875 GO Titan 1-11/16" Assembled Electric Cable Head w/ 1" Fishing Neck	1.03	1.69	5.40
TCUTEMP TCUVOLT	14.69 14.69		HWS_TCU-002 (001704) HWS Telemetry Control Unit (TCU002)	2.30	1.69	10.87
GCL_CCL GCL_GR GCL_GR	13.97 12.50 12.50		HWS_GCL-001 (001475) HWS Gamma Ray Collar Locator (1.6875")	2.69	1.69	13.40
Long Far Near Anci	6.25 6.25 6.25 6.25		HWS_RAS-RAS002 (003041) Hunter Well Science Pulsed Neutron Tool	11.75	1.69	55.82
			HWS_TBN-001 (001725) HWS Terminator Bull Nose (1.6875")	0.25	1.69	0.99

Dataset:	tep_federal sg 341-21_pn_04-05-19.db: field/well/run1/Main.2
Total length:	18.02 ft
Total weight:	86.48 lb
O.D.:	1.69 in

Calibration Report

Database File	f:\data\tep\federal sg 341-21\pn\tep_federal sg 341-21_pn_04-05-19.db
Dataset Pathname	Main.2
Dataset Creation	Sat Apr 06 05:14:20 2019

Gamma Ray Calibration Report

Serial Number:	001475	
Tool Model:	001	
Performed:	Fri Oct 19 14:55:00 2018	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	
Calibrator Reading:	1.0	
Sensitivity:	1.0000	GAPI/

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