RELIANCE OILFIELD SERVICES

Pulsed Neutron Gamma Ray Casing Collar Log

Company TEP Rocky Mountain LLC
Well Federal SG 411-22
Field Grand Valley
County Garfield
State Colorado

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Well Federal SG 411-22
Field Grand Valley
County Garfield State Colorado
Location: API # : 05-045-24135
SEC 22 TWP 7S RGE 96W

Other Services
RBL

Permanent Datum Ground Level Elevation 6090.8'
Log Measured From Kelly Bushing 24 FT
Drilling Measured From Kelly Bushing

Elevation
K.B. 6114.8'
D.F. ---
G.L. 6090.8'

Date	19-MAR-2019
Run Number	One
Depth Driller	6100 FT
Depth Logger	6053 FT
Bottom Logged Interval	6047 FT
Top Log Interval	2698 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	1005 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	6060 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 19-MAR-2019
Log ran from 6047 FT to 2698 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 411-22\pn\tep_federal sg 411-22_pn_03-19-19.db
Dataset Pathname Main1.2
Presentation Format ros_pdn_hunter
Dataset Creation Tue Mar 19 20:07:50 2019
Charted by Depth in Feet scaled 1:240

0	GR (GAPI)	150	4	RNF2	0	
	Casing Collar Locator		60	SIGMA (cu)	0	
-100	Line Speed (ft/min)	100	4.5	RNFI	0	
0	NIRS (cps)	400000				FIS2
0	BKGN (cps)	4000				0 (cps) 45000
0	BKGF (cps)	2000				NIS2
						0 (cps 100000

0	GR (GAPI)	150	4	RNF2	0	
	Casing Collar Locator		60	SIGMA (cu)	0	
-100	Line Speed (ft/min)	100	4.5	RNFI	0	
0	NIRS (cps)	400000				FIS2
0	BKGN (cps)	4000				0 (cps) 45000
0	BKGF (cps)	2000				NIS2
						0 (cps 100000

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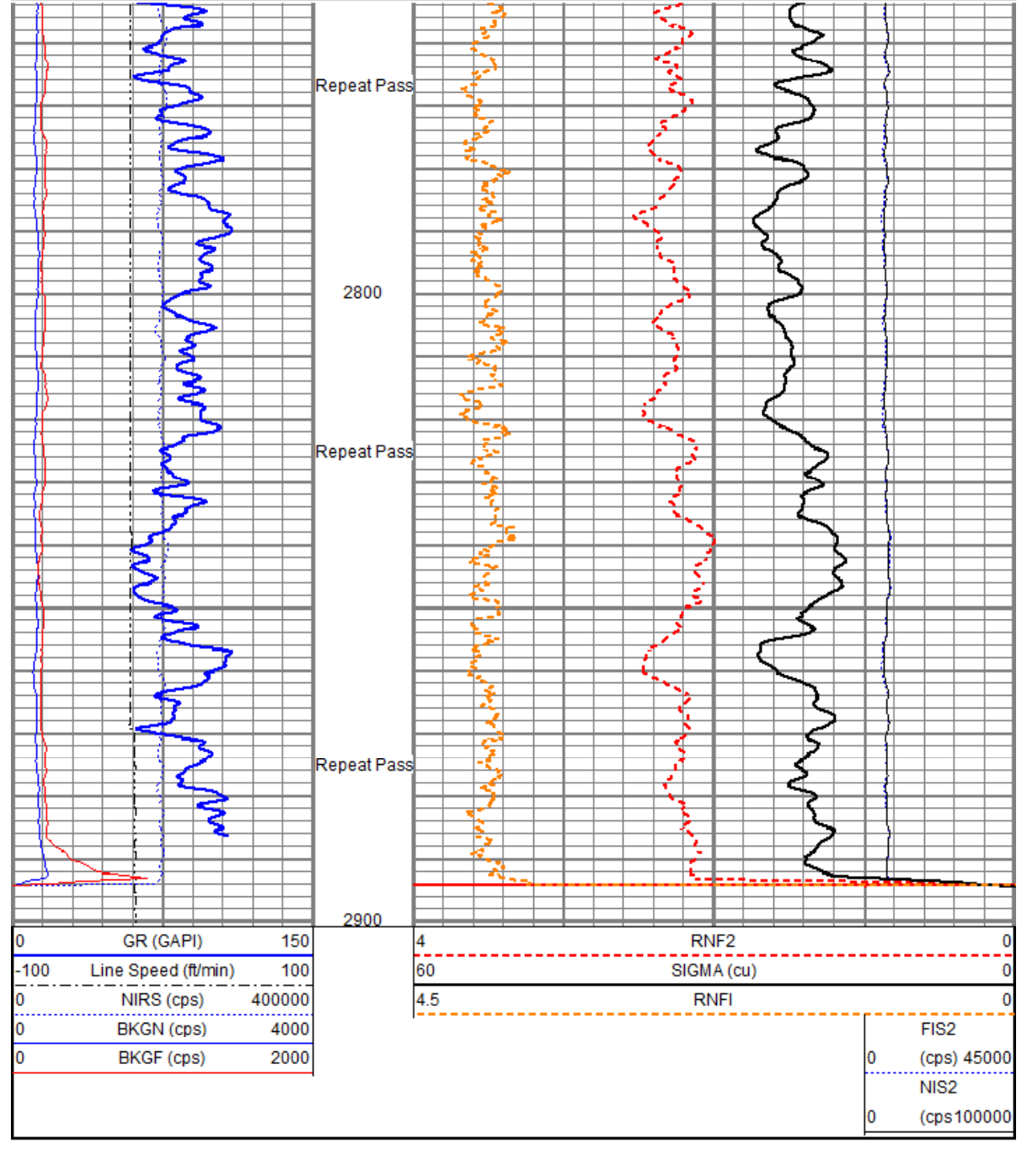
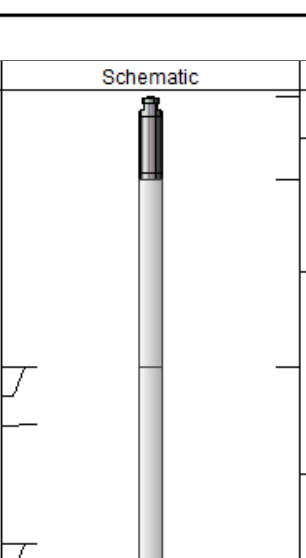
Repeat Pass

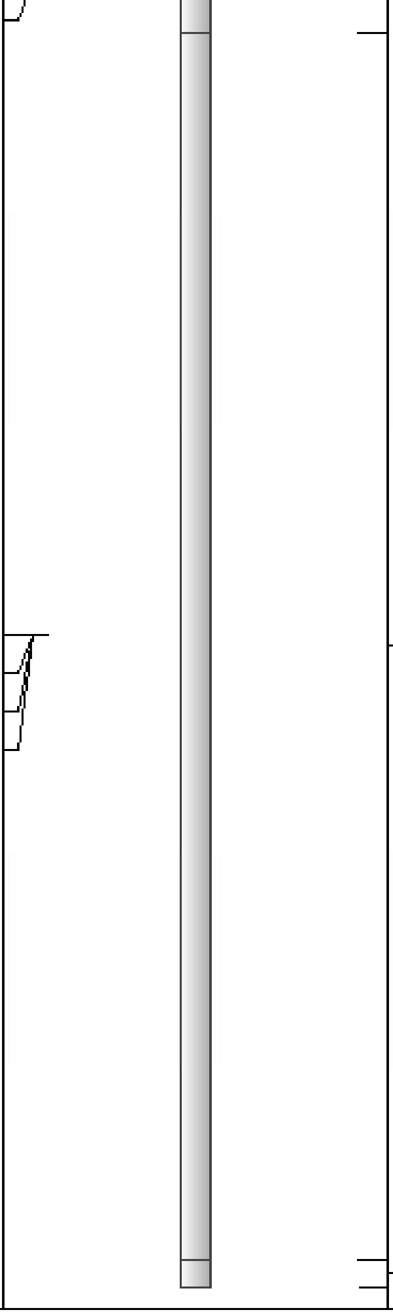
Database File f:\data\tep\federal sg 411-22\pn\tep_federal sg 411-22_pn_03-19-19.db
Dataset Pathname Repeat.2
Presentation Format ros_pdn_hunter
Dataset Creation Tue Mar 19 19:57:34 2019
Charted by Depth in Feet scaled 1:240

0	GR (GAPI)	150	4	RNF2	0	
-100	Line Speed (ft/min)	100	60	SIGMA (cu)	0	
0	NIRS (cps)	400000	4.5	RNFI	0	
0	BKGN (cps)	4000				FIS2
0	BKGF (cps)	2000				0 (cps) 45000
						NIS2
						0 (cps 100000



0	GR (GAPI)	150	4	RNF2	0	
-100	Line Speed (ft/min)	100	60	SIGMA (cu)	0	
0	NIRS (cps)	400000	4.5	RNFI	0	
0	BKGN (cps)	4000				FIS2
0	BKGF (cps)	2000				0 (cps) 45000
						NIS2
						0 (cps 100000

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
			HWS_TCU-002 (001704) HWS Telemetry Control Unit (TCU002)	2.30	1.69	10.87
TCUTEMP TCUVOLT GCL_CCL	14.69 14.69 13.97					
			HWS_GCL-001 (001475) HWS Gamma Ray Collar Locator (1.6875")	2.69	1.69	13.40
GCL_GR	12.50					



GCL_GR	12.50				
Long	6.25	HWS_RAS-RAS002 (003040) Hunter Well Science Pulsed Neutron Tool	11.75	1.69	55.82
Far	6.25				
Near	6.25				
Anci	6.25				
		HWS_TBN-001 (001725) HWS Terminator Bull Nose (1.6875")	0.25	1.69	0.99

Dataset:	tep_federal sg 411-22_pn_03-19-19.db: field/well/run1/Main1.2
Total length:	18.02 ft
Total weight:	86.48 lb
O.D.:	1.69 in

Calibration Report

Database File	f:\data\tep\federal sg 411-22\pn\tep_federal sg 411-22_pn_03-19-19.db
Dataset Pathname	Main1.2
Dataset Creation	Tue Mar 19 20:07:50 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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Company	TEP Rocky Mountain LLC
Well	Federal SG 411-22
Field	Grand Valley
County	Garfield
State	Colorado