RELIANCE OILFIELD SERVICES

Pulsed Neutron Gamma Ray Casing Collar Log

Company TEP Rocky Mountain LLC
Well Chevron GM 32-19
Field Grand Valley
County Garfield
State Colorado

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Field	Grand Valley		
County	Garfield	State	Colorado
Location:	API #: 05-045-24360		Other Services RBL
	SEC 20 TWP 6S RGE 96W		
Permanent Datum	Ground Level	Elevation 5752.1'	Elevation K.B. 5776.1' D.F. --- G.L. 5752.1'
Log Measured From	Kelly Bushing	24 FT	
Drilling Measured From	Kelly Bushing		

Date	02-FEB-2021
Run Number	One
Depth Driller	7783 FT
Depth Logger	7684 FT
Bottom Logged Interval	7684 FT
Top Log Interval	4206 FT
Open Hole Size	8.750"
Type Fluid	Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	---
Estimated Cement Top	---
Time Well Ready	ROA
Time Logger on Bottom	11:45
Equipment Number	HD-0359
Location	Grand Junction, CO
Recorded By	A. Ellsworth
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	36	J-55	Surface	1028 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	7749 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 02-FEB-2021
Log ran from 7684 FT to 4206 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\chevron gm 32-19\pn\tep_chevron gm 32-19_pn_02-02-21.db
Dataset Pathname runSHIFTED/merge1
Presentation Format ros_pdn_hunter
Dataset Creation Fri Feb 05 01:11:53 2021
Charted by Depth in Feet scaled 1:240

0	GR (GAPI)	150	4	RNF2	0		
	PN Casing Collar Locator		60	SIGMA (cu)	0		
-100	Line Speed (ft/min)	100	4.5	RNFI	-1		
0	NIRS (cps)	400000	1	PN Porosity (Sandstone) (pu)	0		FIS2
0	BKGN (cps)	4000				0	(cps) 45000
0	BKGF (cps)	2000					NIS2
						0	(cps100000

0	GR (GAPI)	150	4	RNF2	0		
	PN Casing Collar Locator		60	SIGMA (cu)	0		
-100	Line Speed (ft/min)	100	4.5	RNFI	-1		
0	NIRS (cps)	400000	1	PN Porosity (Sandstone) (pu)	0		FIS2
0	BKGN (cps)	4000				0	(cps) 45000
0	BKGF (cps)	2000					NIS2
						0	(cps100000

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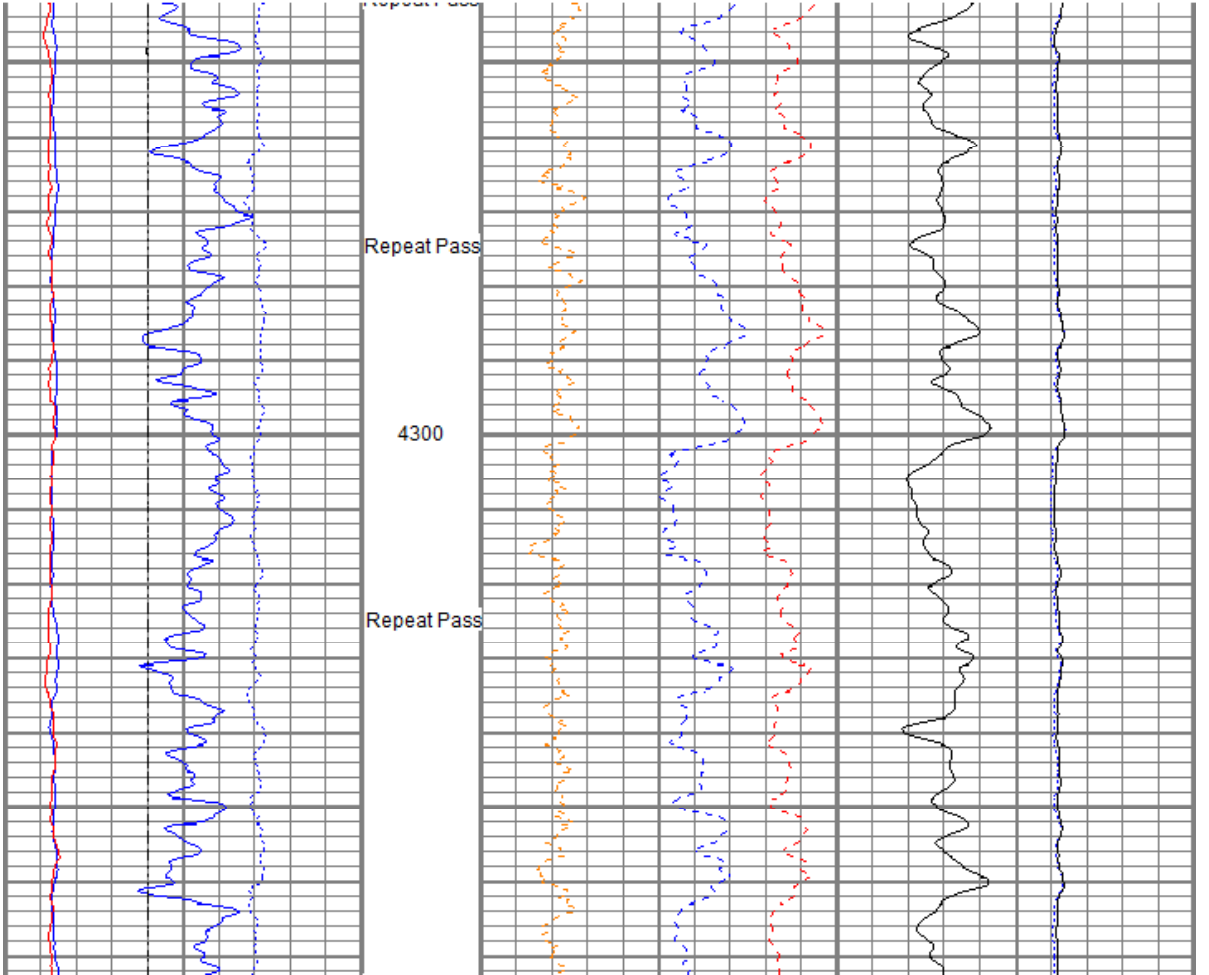
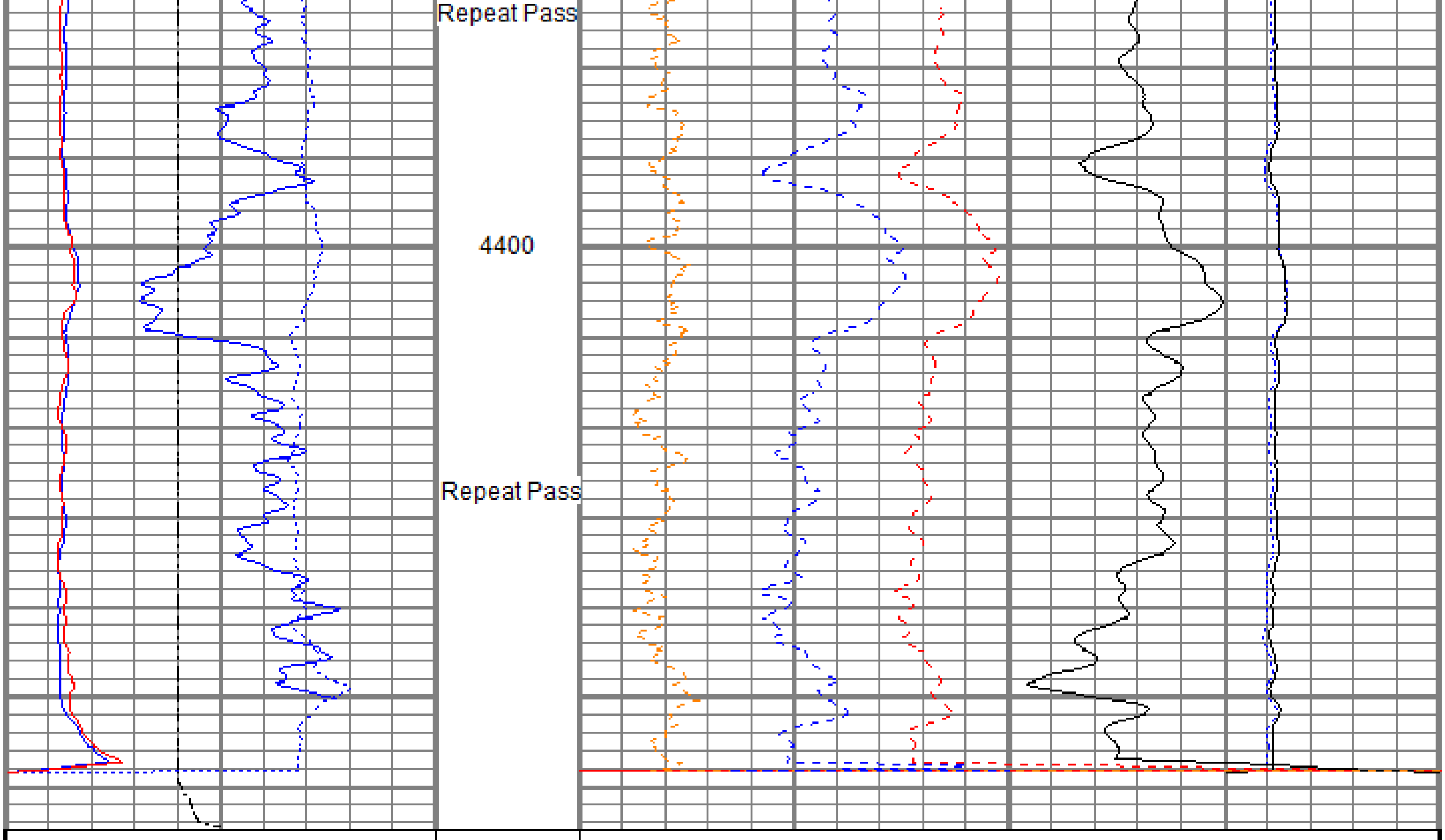
Repeat Pass

Database File f:\data\tep\chevron gm 32-19\pn\tep_chevron gm 32-19_pn_02-02-21.db
Dataset Pathname repeat.2
Presentation Format ros_pdn_hunter
Dataset Creation Tue Feb 02 17:59:58 2021
Charted by Depth in Feet scaled 1:240

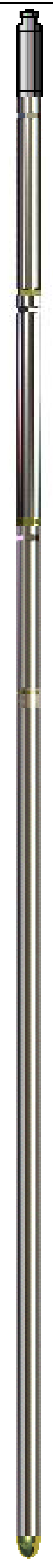
0	GR (GAPI)	150	4	RNF2	0		
-100	Line Speed (ft/min)	100	60	SIGMA (cu)	0		
0	NIRS (cps)	400000	4.5	RNFI	-1		
0	BKGN (cps)	4000		PN Porosity (Sandstone)			FIS2
0	BKGF (cps)	2000	1	(Porosity Decimal Fraction)	0	0	(cps) 45000
							NIS2
						0	(cps100000





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	-1
1	PN Porosity (Sandstone) (Porosity Decimal Fraction)	0
0	FIS2 (cps)	45000
0	NIS2 (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 (001681) HWS Gamma Ray Collar Locator (1.6875")	2.69	1.69	13.40
GCL_GR	12.50					
Long Far Near Anci	6.25 6.25 6.25 6.25		HWS_RAS-RAS002 (003040) Hunter Well Science Pulsed Neutron Tool	11.75	1.69	55.82
LOCTIM UTCTIM	0.00 0.00		HWS_TBN-001 (001724) HWS Terminator Bull Nose (1.6875")	0.25	1.69	0.99

Dataset:	tep_chevron gm 32-19_pn_02-02-21.db: field/well/run1/main2.2
Total length:	18.02 ft
Total weight:	86.48 lb
O.D.:	1.69 in

Calibration Report

Database File	f:\data\tep\chevron gm 32-19\pn\tep_chevron gm 32-19_pn_02-02-21.db
Dataset Pathname	main2.2
Dataset Creation	Tue Feb 02 18:03:49 2021

RAS Calibration Report

Calibration Date: Tue Jun 11 14:55 2020 Meas #: 003041

Water Tank

Description	Curve	Standard	Mean	Dev
Sigma Near	SIGN	23.1	24.1	0.23
Sigma Far	SIGF	22.8	23.5	0.27
Ratio Near-Long Capture	RNL2	5.79	6.45	0.04
Ratio Near-Long Burst	RNLB	6.49	6.87	0.04
Ratio Near-Far Capture	RNF2	1.85	2.00	0.01
Ratio Near-Far Burst	RNFB	2.03	2.16	0.01
Spectral Hydrogen Index	HIS2	12.84	12.61	0.16
Carbon-Oxygen Ratio	CORS	1.34	1.30	0.05
Ratio Burst-Capture Near	RNBC	1.46	1.73	0.01
Ratio Burst-Capture Far	RFBC	1.50	1.67	0.01

Hydrocarbon Tank

Description	Curve	Standard	Mean	Dev
Sigma Near	SIGN	25.7	26.8	0.26
Sigma Far	SIGF	25.1	25.5	0.45
Ratio Near-Long Capture	RNL2	1.78	2.98	0.02
Ratio Near-Long Burst	RNLB	2.57	4.38	0.02
Ratio Near-Far Capture	RNF2	0.98	1.30	0.01
Ratio Near-Far Burst	RNFB	1.30	1.64	0.01
Spectral Hydrogen Index	HIS2	16.68	17.41	0.28
Carbon-Oxygen Ratio	CORS	1.51	1.54	0.04
Ratio Burst-Capture Near	RNBC	2.23	2.46	0.02
Ratio Burst-Capture Far	RFBC	2.09	2.18	0.02

Gamma Ray Calibration Report

Serial Number:	001681	
Tool Model:	001	
Performed:	(Not Performed)	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	
Calibrator Reading:	1.0	
Sensitivity:	1.0000	GAPI/

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