C&J ENERGY SERVICES

Gamma Ray C.C.L.
Cement Bond V.D.L.

Company	Anadarko Petroleum
Well	HSR RENSHAW 5-28A
Field	WATTENBERG
County	WELD
State	COLORADO

Company Anadarko Petroleum

Well HSR RENSHAW 5-28A

Field WATTENBERG

County WELD State COLORADO

Location: API #: 05-123-14340

SW/NW

SEC 28 TWP 3N RGE 66W

Other Services

Permanent Datum	GROUND LEVEL	Elevation	4948'	Elevation
Log Measured From	KELLY BUSHING			K.B. 4958'
Drilling Measured From	KELLY BUSHING			D.F. 4957' G.L. 4948'

Date	November 22, 2019
Run Number	One
Depth Driller	8006
Depth Logger	4700'
Bottom Logged Interval	4703'
Top Log Interval	Surface
Casing Size	4.5"
Type Fluid	Water
Max. Recorded Temp.	N/A
Estimated Cement Top	N/A
Time Well Ready	ROA
Time Logger On Bottom	
Unit Number	200099
Tool Size / ID Number	2 3/4 Radial
Location	Fort Lupton, Colorado
Recorded By	Adam Gardner
Witnessed By	Jeff Hammond

Borehole Record / Tubing Record

Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String				
Prot. String				
Production String	4.5"	11.6	10	628
Liner	2 7/8"	4.7		

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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

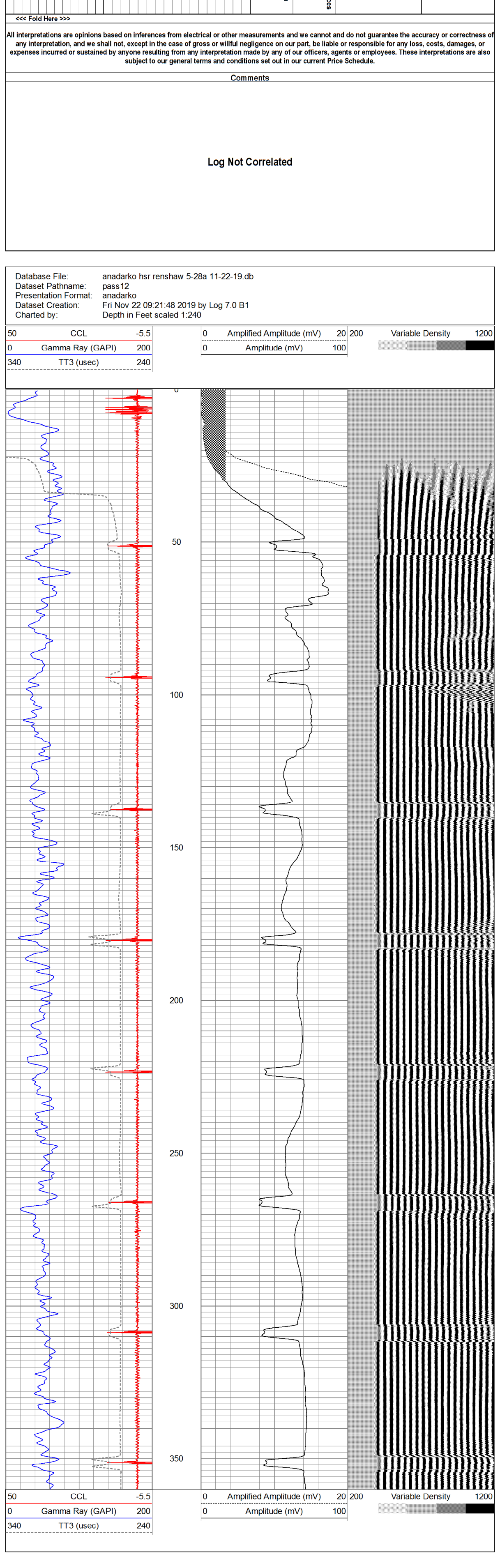
Log Not Correlated

Database File: anadarko hsr renshaw 5-28a 11-22-19.db
Dataset Pathname: pass12
Presentation Format: anadarko
Dataset Creation: Fri Nov 22 09:21:48 2019 by Log 7.0 B1
Charted by: Depth in Feet scaled 1:240

50 CCL -5.5
0 Gamma Ray (GAPI) 200
340 TT3 (usec) 240

0 Amplified Amplitude (mV) 20
0 Amplitude (mV) 100

200 Variable Density 1200



50 CCL -5.5
0 Gamma Ray (GAPI) 200
340 TT3 (usec) 240

0 Amplified Amplitude (mV) 20
0 Amplitude (mV) 100

200 Variable Density 1200

Database File: anadarko hsr renshaw 5-28a 11-22-19.db
Dataset Pathname: pass10
Presentation Format: anadarko
Dataset Creation: Fri Nov 22 08:19:28 2019 by Log 7.0 B1
Charted by: Depth in Feet scaled 1:240

50 CCL -5.5
0 Gamma Ray (GAPI) 200
340 TT3 (usec) 240

0 Amplified Amplitude (mV) 20
0 Amplitude (mV) 100

200 Variable Density 1200

Calibration Report

Database File: anadarko hsr renshaw 5-28a 11-22-19.db
Dataset Pathname: pass10
Dataset Creation: Fri Nov 22 08:19:28 2019 by Log 7.0 B1

Gamma Ray Calibration Report

Type / Serial: Probe275dig / 110785

SHOP CALIBRATION Fri Oct 26 07:37:47 2018

	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	1.0				cps
		0.6800			GAPI/cps

PRIMARY VERIFICATION

Background	0.0		cps
Calibrator	0.0		cps
Difference		0.0	GAPI

BEFORE SURVEY VERIFICATION

Background	0.0		cps
Calibrator	0.0		cps
Difference		0.0	GAPI

AFTER SURVEY VERIFICATION

Background	0.0		cps
Calibrator	0.0		cps
Difference		0.0	GAPI

Segmented Cement Bond Log Calibration Report

Serial Number: 101020
Tool Model: Probe

Calibration Casing Diameter: 4.500 in
Calibration Depth: 3463.250 ft

Master Calibration, performed Fri Nov 22 08:12:44 2019:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.008	1.919	0.800	81.196	42.080	0.456
CAL	0.007	0.007				
5'	0.007	0.008	0.800	81.196	91472.911	-682.567
SUM						
S1	0.007	-0.013	0.000	81.196	-3980.601	28.620
S2	0.007	0.007	0.000	81.196	-96399.776	718.997
S3	0.007	0.007	0.000	81.196	-130423.226	932.959
S4	0.007	0.007	0.000	81.196	-138574.677	1025.101
S5	0.007	0.007	0.000	81.196	-127915.087	929.071
S6	0.007	0.007	0.000	81.196	-118778.295	880.108
S7	0.007	0.007	0.000	81.196	-151172.375	1125.673
S8	0.007	0.006	0.000	81.196	-110859.742	795.722

Internal Reference Calibration, performed Fri Jan 13 14:30:16 2012:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.007	0.007	1.000	0.000

Air Zero Calibration, performed Mon Jul 01 12:28:08 2019:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.000	0.000	0.000
5'	0.000	0.000	0.000
SUM			
S1	0.000	0.000	0.000
S2	0.000	0.000	0.000
S3	0.000	0.000	0.000
S4	0.000	0.000	0.000
S5	0.000	0.000	0.000
S6	0.000	0.000	0.000
S7	0.000	0.000	0.000
S8	0.000	0.000	0.000