The Perforators LLC

Company Duco Well Service
Well Lenart S-1
Field Wattenberg
County Adams
State CO

Cement Bond Gamma Ray CCL Log

Company	Duco Well Service
Well	Lenart S-1
Field	Wattenberg
County	Adams
State	CO
API #:	05-001-09362-00

Location: SW/NE
SEC 12 TWP 1S RGE 68W

Other Services
CBL
CICR
Cement
Perforate
Spartan Booster

Permanent Datum	Ground Level	Elevation	5080'
Log Measured From	Kelly Bushing 5' Above Ground Level		
Drilling Measured From	Kelly Bushing		

Elevation
K.B. 5085'
D.F. -----
G.L. 5080'

Date	7-30-19
Run Number	One
Depth Driller	N/A
Depth Logger	4883'
Bottom Logged Interval	4882'
Top Log Interval	Surface
Open Hole Size	N/A
Type Fluid	Water
Density / Viscosity	N/A
Max. Recorded Temp.	N/A
Estimated Cement Top	4010'
Time Well Ready	13:00
Time Logger on Bottom	13:38
Equipment Number	T943
Location	Roosevelt
Recorded By	Funk
Witnessed By	Mr. Daniels

Borehole Record

Run Number	Bit	From	To
One	12 1/4"	0	N/A
Two	7 7/8"	0	N/A

Tubing Record

Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	8 5/8"	24#	0	1116'
Prot. String				
Production String	4 1/2"	10.5#	0	4070'
Liner				

<<< Fold Here >>>

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

CBL not depth correlated.

The Perforators LLC

Main Pass

Database File	lenart s-1.db
Dataset Pathname	Wattenberg/Lenart_S-1/run1/pass6
Presentation Format	cbl
Dataset Creation	Tue Jul 30 13:42:46 2019
Charted by	Depth in Feet scaled 1:240

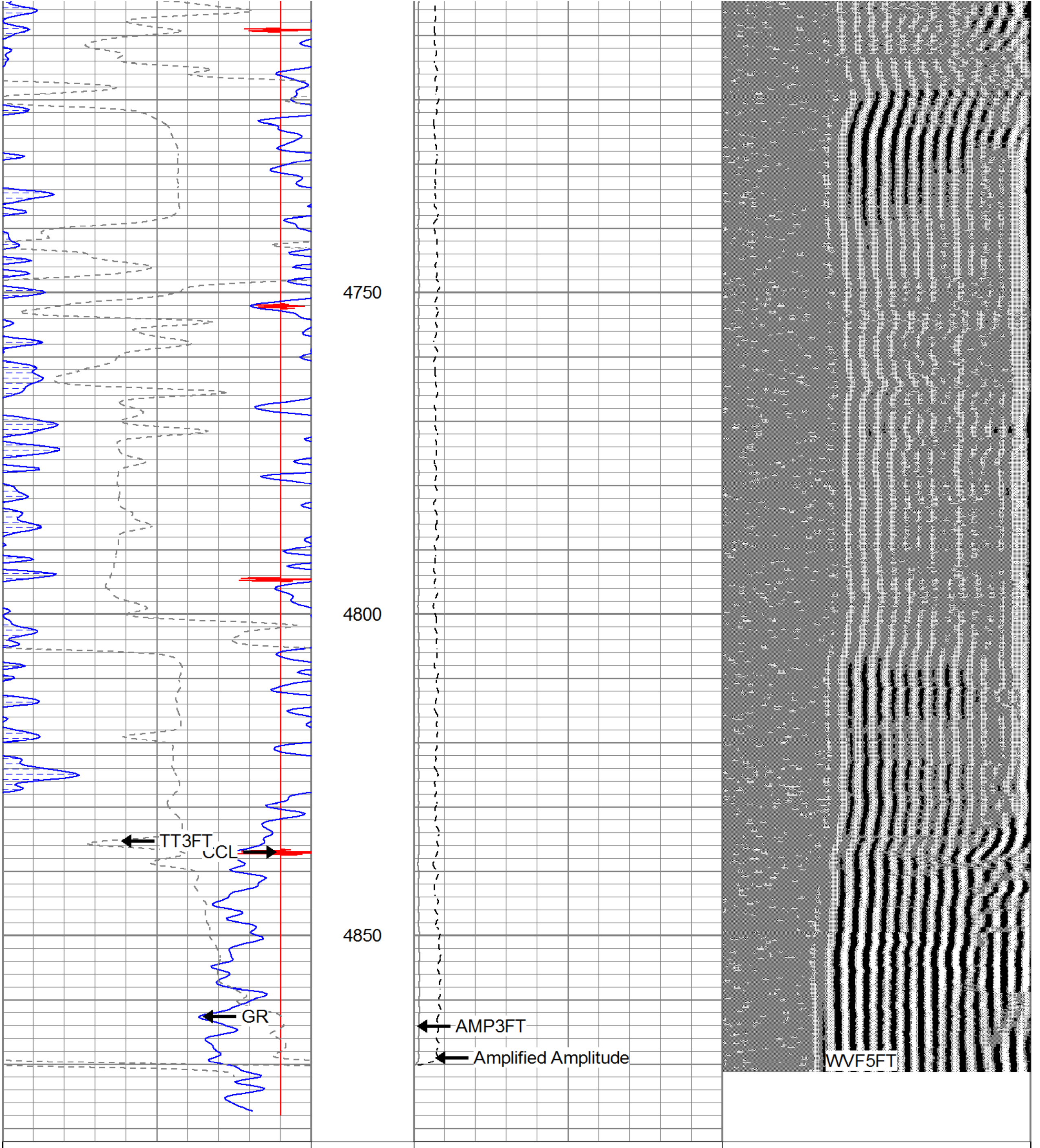
9	Collar Locator	-1	0	Amplitude (mV)	100	200	Variable Density (usec)	1200
0	Gamma Ray (GAPI)	150	0	Amplified Amplitude (mV)	20			
550	Travel Time (usec)	350						

The Perforators LLC

Repeat Section

Database File lenart s-1.db
Dataset Pathname Wattenberg/Lenart_S-1/run1/pass5
Presentation Format cbl
Dataset Creation Tue Jul 30 13:38:57 2019
Charted by Depth in Feet scaled 1:240

9	Collar Locator	-1	0	Amplitude (mV)	100	200	Variable Density (usec)	1200
0	Gamma Ray (GAPI)	150	0	Amplified Amplitude (mV)	20			
550	Travel Time (usec)	350						



9	Collar Locator	-1	0	Amplitude (mV)	100	200	Variable Density (usec)	1200
0	Gamma Ray (GAPI)	150	0	Amplified Amplitude (mV)	20			
550	Travel Time (usec)	350						

Calibration Report

Database File lenart s-1.db
Dataset Pathname Wattenberg/Lenart_S-1/run1/pass5
Dataset Creation Tue Jul 30 13:38:57 2019

Gamma Ray Calibration Report

Serial Number:	970903	
Tool Model:	P	
Performed:	Tue Apr 18 10:15:17 2017	
Calibrator Value:	200.0	GAPI
Background Reading:	54.0	cps
Calibrator Reading:	250.0	cps
Sensitivity:	1.0204	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	020406	
Tool Model:	P	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	343.417	ft

Master Calibration, performed Fri Jul 19 19:09:37 2019:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.024	1.069	1.000	81.921	77.446	-0.841
CAL						
5'	0.024	2.341	1.000	71.921	30.602	0.272
SUM						
S1						
S2						
S3						
S4						
S5						
S6						
S7						
S8						

Internal Reference Calibration, performed (Not Performed):

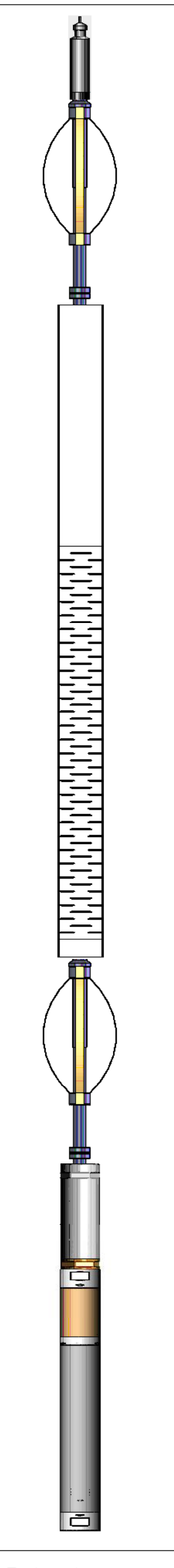
	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL						

Air Zero Calibration, performed Thu Jun 20 11:30:56 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			
S2			
S3			
S4			
S5			
S6			
S7			
S8			

Sensor	Offset (ft)
CHD	20.25
CENT	19.13
WVF3FT	11.90
WVF5FT	10.90
CENT	7.65
CCL	4.08
GR	2.50

Schematic



Description	Length (ft)	O.D. (in)	Weight (lb
CHD-1.6875" 1 11-16" Cablehead	1.13	1.69	5.00
CENT-TitanBig Big Titan 3 Bowspring Centralizer	2.73	2.75	25.00
CBL-P (020406) Probe 2 3/4" (Single Pin)	8.75	2.75	45.00
CENT-TitanSmall Small Titan 3 Bowspring Centralizer	2.73	1.69	5.00
CCL-Probe (970903) Probe 2 3/4"	1.42	2.75	7.50
GR-P (970903) Probe 2 3/4" (Gamma Ray)	3.50	2.75	34.00

Dataset: lenart s-1.db: Wattenberg/Lenart_S-1/run1/pass6
Total length: 20.25 ft
Total weight: 121.50 lb
O.D.: 2.75 in