PATRIOT
WELL SOLUTIONS

RADIAL CEMENT BOND LOG
GAMMA RAY CCL

Company	WHITING PETROLEUM CORPORATION
Well	RAZOR 30J-3143
Field	WILDCAT
County	WELD
State	COLORADO

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County WELD
State COLORADO
Country USA

Location: API # : 05123444600

2357 FSL 1955 FEL

SEC 30 TWP 10N RGE 58W

Other Services

Permanent Datum	GROUND LEVEL	Elevation 4838	Elevation
Log Measured From	K.B.		K.B. 4859
Drilling Measured From	K.B.		D.F. 4858
			G.L. 4839

Date	AUGUST 31, 2017
Run Number	1
Depth Driller	14,010'
Depth Logger	6,396'
Bottom Logged Interval	6,396'
Top Log Interval	70'
Open Hole Size	8.5"
Type Fluid	WATER
Density / Viscosity	8.34
Max. Recorded Temp.	222F
Estimated Cement Top	SEE LOG
Time Well Ready	ROA
Time Logger on Bottom	11:50
Equipment Number	1007
Location	BRIGHTON, CO
Recorded By	JAMES ZLOMKE
Witnessed By	KELLY LEWIS

Borehole Record			Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	9.625"	36#	SURFACE	2045.6'
Prot. String				
Production String	5.5"	20#	SURFACE	13,998.5'
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

WELL LOGGED UNDER 1000KPSI

CORRELATED TO SHORT JOINT @ 5,426' - 5,436'

SURFACE LOCATION DATA ACQUIRED FROM COGIS WELL DATA

THANKS FOR CHOOSING PATRIOT WELL SOLUTIONS

PATRIOT
WELL SOLUTIONS

MAIN LOG PASS

1000 PSI

Database File	razor_30j_3143.db
Dataset Pathname	rcbl/main
Presentation Format	PATRIO~2
Dataset Creation	Sat Sep 02 08:39:11 2017
Charted by	Depth in Feet scaled 1:240

280 TT (usec) 230 -9 CCL 1 0 GR (GAPI) 200	LTEN 0 (lb 2000	0 AMP (mV) 100 0 3FT X 5 (mV) 20	150 AMPAVG 100 0 AMPMAX 150 0 AMPMIN 150	200 VDL (usec) 1200 1 RADIAL MAP 8

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MAIN LOG PASS

1000 PSI

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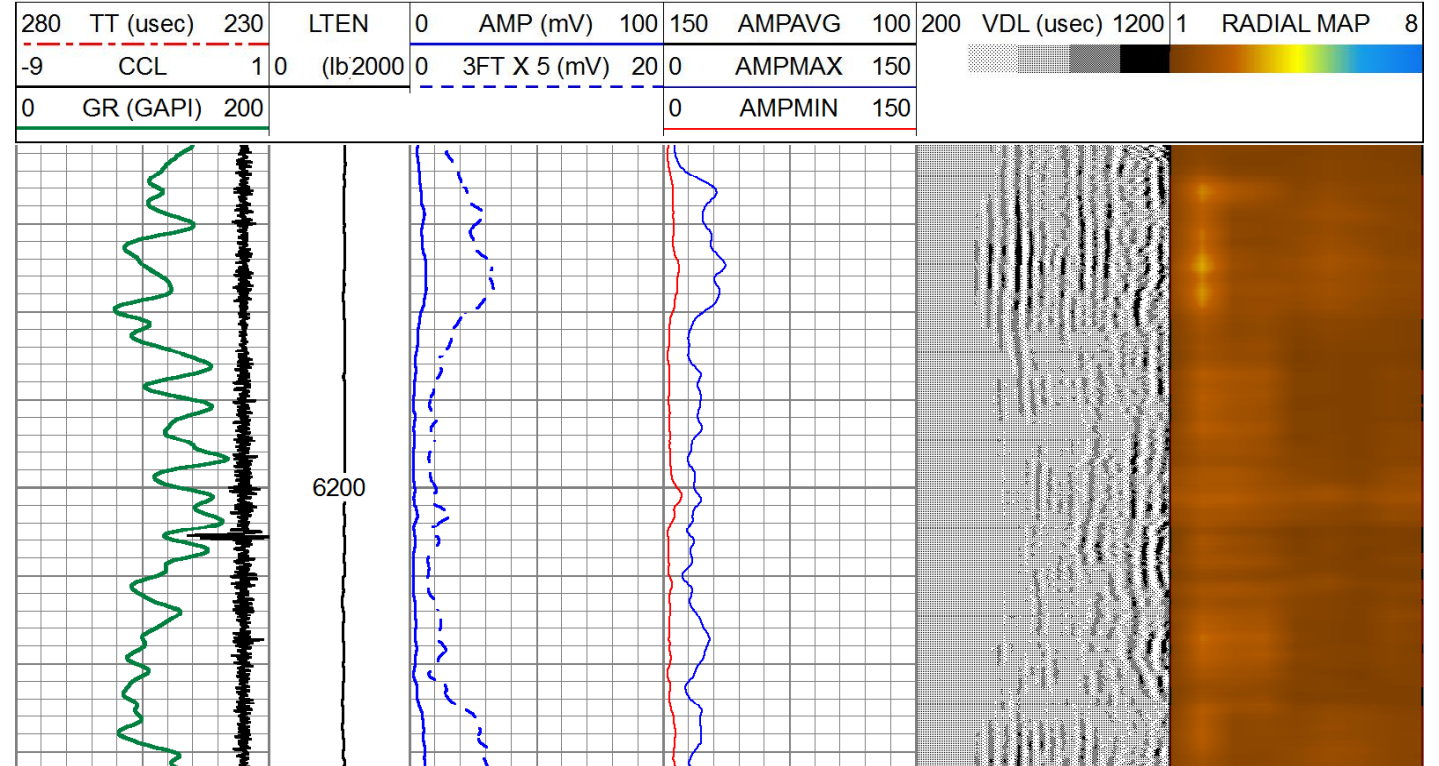
REPEAT LOG PASS

1000 PSI

Database File razor_30j_3143.db
Dataset Pathname rcbl/repeat
Presentation Format PATRIO~2
Dataset Creation Sat Sep 02 08:38:18 2017
Charted by Depth in Feet scaled 1:240

280 TT (usec) 230 -9 CCL 1 0 GR (GAPI) 200	LTEN 0 (lb 2000	0 AMP (mV) 100 0 3FT X 5 (mV) 20	150 AMPAVG 100 0 AMPMAX 150 0 AMPMIN 150	200 VDL (usec) 1200 1 RADIAL MAP 8



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REPEAT LOG PASS

1000 PSI

Calibration Report

Database File razor_30j_3143.db
Dataset Pathname rcbl/main
Dataset Creation Sat Sep 02 08:39:11 2017

Gamma Ray Calibration Report

Serial Number:	PT0661	
Tool Model:	Probe275dig	
Performed:	Thu Aug 31 07:52:53 2017	
Calibrator Value:	296.0	GAPI
Background Reading:	107.3	cps
Calibrator Reading:	342.2	cps
Sensitivity:	1.2600	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	PT0762	
Tool Model:	Probe	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	417.614	ft

Master Calibration, performed Thu Aug 31 11:29:38 2017:

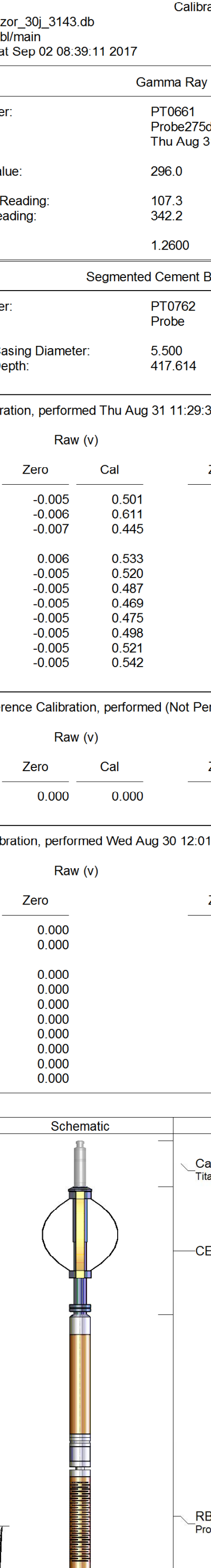
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.005	0.501	1.000	72.000	140.382	1.655
CAL	-0.006	0.611				
5'	-0.007	0.445	1.000	72.000	157.037	2.085
SUM						
S1	0.006	0.533	0.000	100.000	189.753	1.121
S2	-0.005	0.520	0.000	100.000	190.716	0.892
S3	-0.005	0.487	0.000	100.000	203.175	0.992
S4	-0.005	0.469	0.000	100.000	210.927	1.017
S5	-0.005	0.475	0.000	100.000	208.474	1.005
S6	-0.005	0.498	0.000	100.000	198.748	0.936
S7	-0.005	0.521	0.000	100.000	190.083	0.910
S8	-0.005	0.542	0.000	100.000	182.931	0.869

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.006	0.611	1.000	0.000

Air Zero Calibration, performed Wed Aug 30 12:01:03 2017:

	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

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
			Cable_Head-1_7/16 Titan 1 7/16" Cable Head	1.02	1.44	3.31
			CENT-PTS275	2.83	2.75	
WVFS8	11.63		RBT-Probe (PT0762) Probe Radii Bond Tool with Digital Telemetry	8.92	2.75	100.00
WVFS7	11.63					
WVFS6	11.63					
WVFS5	11.63					
WVFS4	11.63					
WVFS3	11.63					
WVFS2	11.63					
WVFS1	11.63					
WVFCAL	11.63					
WVF3FT	11.63					
WVF5FT	10.63					
HEADVOLT	7.38					
			CENT-PTS275	2.83	2.75	
CCL	3.67					
GR	2.42		GR-Probe275dig (PT0661) Probe Digital Gamma CCL	4.54	2.75	55.00

Dataset: razor_30j_3143.db: field/well/rcbl/main
Total length: 20.14 ft
Total weight: 158.31 lb
O.D.: 2.75 in

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Company	WHITING PETROLEUM CORPORATION		
Well	RAZOR 30J-3143		
Field	WILDCAT		
County	WELD		
State	COLORADO	Country	USA