RADIAL CEMENT BOND LOG
VDL CCL
GAMMA RAY

PIONEER
Pioneer Energy Services

Company	ANADARKO PETROLEUM CORPORATION
Well	HOWARD 2N-33HZR
Field	WATTENBERG
County	WELD
State	CO

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County WELD State CO

Location: API # : 0512338006
SHL: 370' FNL & 1094' FEL
NENE
SEC 28 TWP 1N RGE 67W

Other Services
56 ARM
CALIPER

			Elevation
Permanent Datum	GROUND LEVEL	Elevation 4983	K.B. 4999
Log Measured From	KELLY BUSHING		D.F. 4999
Drilling Measured From	KB = 16'		G.L. 4983

Date	10 DEC 2013
Run Number	TWO
Depth Driller	12802
Depth Logger	7082
Bottom Logged Interval	7080
Top Log Interval	SURFACE
Open Hole Size	8.75"
Type Fluid	WATER
Density / Viscosity	8.34 PPG
Max. Recorded Temp.	225 F
Estimated Cement Top	95
Time Well Ready	ROA
Time Logger on Bottom	1445
Equipment Number	75
Location	FT. MORGAN
Recorded By	SHAUN SCHUMAN
Witnessed By	MR. EDGAR CHAVEZ

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	1037
Prot. String				
Production String	7"	26	SURFACE	7957
Liner	4.5"	11.6	6963	12787

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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

THANK YOU FOR USING PIONEER ENERGY!

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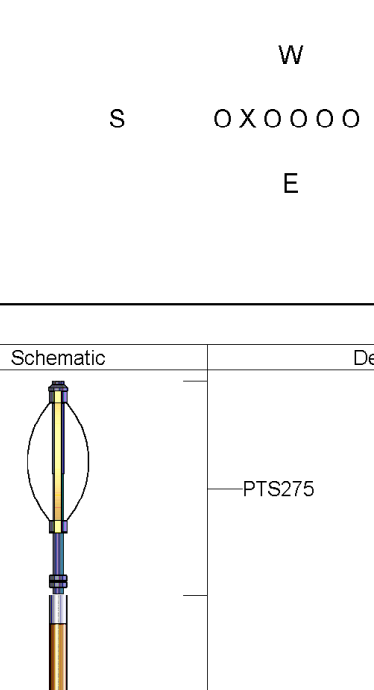
Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			PTS275	2.83	2.75	
WVF3FT WVFCAL WVFS1 WVFS2 WVFS3 WVFS4 WVFS5 WVFS6 WVFS7 WVFS8 WVF5FT	11.86 11.86 11.86 11.86 11.86 11.86 11.86 11.86 11.86 11.86 10.78		RBT-Probe (Base) Probe Radii Bond Tool with Digital Telemetry	8.92	2.75	90.00
			PTS275	2.83	2.75	
CCL TEMP GR	3.84 3.14 2.30		GCT-GRCCLTEMP (130608) Probe GCT	4.69	2.75	100.00

Dataset: anadarko_howard_2n-33hz_jbgr_caliper_rcbl.db: field/well/run3/pass4
Total Length: 19.27 ft
Total Weight: 190.00 lb
O.D. 2.75 in

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MAIN PASS

Logged with 2200 PSI applied at wellhead

Database File: anadarko_howard_2n-33hz_jbgr_caliper_rcbl.db
Dataset Pathname: run3/RblFinal
Presentation Format: scbl02
Dataset Creation: Wed Dec 11 16:29:06 2013
Charted by: Depth in Feet scaled 1:240

Calibration Report

Database File: anadarko_howard_27c-33hz_jbgr_caliper_rcbl.db
Dataset Pathname: run3/pass7
Dataset Creation: Wed Dec 11 12:27:45 2013 by Log 7.0 B1

Gamma Ray Calibration Report

Serial Number: 130608
Tool Model: GRCCLTEMP
Performed: Mon Dec 9 08:10:18 2013

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 1.0000 GAPI/cps

Temperature Calibration Report

Serial Number: 130608
Tool Model: GRCCLTEMP
Performed: Wed Dec 4 11:29:51 2013

	Reference	Reading
Low Reference:	100.00 degF	6509.65degF
High Reference:	350.00 degF	27350.70degF

Gain: 0.01
Offset: 21.91
Delta Spacing 1

Segmented Cement Bond Log Calibration Report

Serial Number: Base
Tool Model: Probe

Calibration Casing Diameter: 7.000 in
Calibration Depth: 742.350 ft

Master Calibration, performed Wed Dec 11 12:10:18 2013:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.012	0.741	1.500	62.165	83.208	0.479
CAL	0.012	1.006				
5'	0.012	0.743	1.500	62.165	83.013	0.473
SUM						
S1	0.012	0.658	0.000	95.000	147.032	-1.771
S2	0.012	0.666	0.000	95.000	145.384	-1.771
S3	0.012	0.704	0.000	95.000	137.399	-1.691
S4	0.012	0.755	0.000	95.000	127.975	-1.570
S5	0.012	0.786	0.000	95.000	122.764	-1.518
S6	0.012	0.792	0.000	95.000	121.775	-1.494
S7	0.012	0.756	0.000	95.000	127.784	-1.579
S8	0.012	0.701	0.000	95.000	137.890	-1.705

Internal Reference Calibration, performed Mon Dec 09 07:01:26 2013:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.012	1.006	1.000	0.000

Air Zero Calibration, performed Mon Dec 09 06:54:41 2013:

	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

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County	WELD
State	CO