J-W WIRELINE COMPANY

CEMENT BOND
GAMMA RAY
COLLAR CORRELATION LOG

Company	NOBLE ENERGY INC.
Well	OSTER C19-27D
Field	WATTENBERG
County	WELD
State	COLORADO

Company NOBLE ENERGY INC.
Well OSTER C19-27D
Field WATTENBERG
County WELD State COLORADO

Location: API # : 05-123-34390-00
SHL: 2491' FSL &2117' FWL NESW
BHL: 104' FSL & 1203' FEL SESE
SEC. 18, TWP. 4N, RGE 64W
SEC TWP RGE

Other Services
NONE

Permanent Datum	GROUND LEVEL	Elevation	4834	Elevation K.B. 4847 D.F. 4846 G.L. 4834
Log Measured From	KELLY BUSHING			
Drilling Measured From	KELLY BUSHING			

Date	3-JAN-2012
Run Number	ONE
Depth Driller	7912
Depth Logger	7809
Bottom Logged Interval	7808
Top Log Interval	1920
Open Hole Size	7 7/8
Type Fluid	WATER
Density / Viscosity	--
Max. Recorded Temp.	250
Estimated Cement Top	2136
Time Well Ready	--
Time Logger on Bottom	--
Equipment Number	2405/ 1 11/16 TEKCO
Location	BRIGHTON
Recorded By	HAYES/KRAL
Witnessed By	CASEY RUPPEL

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

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	8 5/8	24#	SURFACE	650
Prot. String				
Production String	4.5	11.6#	SURFACE	7902
Liner				

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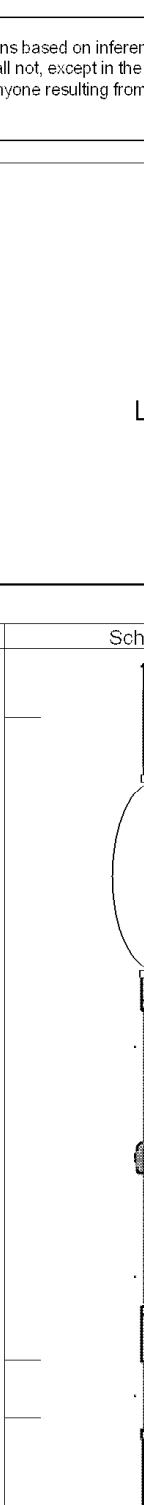
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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 CORRELATED TO CD, CN, ML LOG
DATED 26-NOV-2011

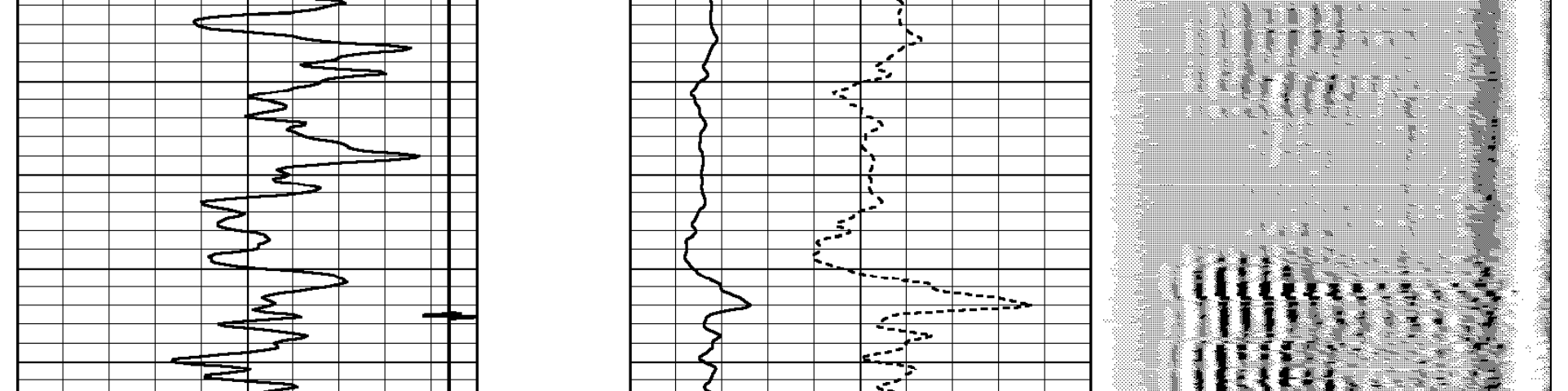
LOG SPLIT FOR CORRELATION PURPOSES



Sensor	Offset (ft)	Description	Len (ft)	OD (in)	Wt (lb)
CCL	20.25	CCL-169TEKCO (169) 1 11/16" Tekco Logging	1.67	1.69	20.00
		CENT-TekCo (1 11/16 Adj.) (001) 1 11/16" Tekco Cent	2.92	1.69	10.00
WVF3 WVF5	11.00 10.17	CBL-3-5tekco169 (1) 1 11/16 Tekco w/o Temp	9.75	1.69	70.00
		CENT-TekCo (1 11/16 Adj.) (002) 1 11/16" Tekco Cent	2.92	1.69	10.00
GR	1.00	GR-1.69TEKCO (576) 1 11/16 Tekco Logging GR	3.83	1.69	50.00

Dataset: oster c19-27d.db: field/well/run1/pass2
Total Length: 21.08 ft
Total Weight: 160.00 lb
O.D. 1.69 in

Database File: oster c19-27d.db
Dataset Pathname: pass2
Presentation Format: cblx
Dataset Creation: Tue Jan 03 07:39:50 2012 by Log Std Casedhole 10121
Charted by: Depth in Feet scaled 1:240



30	Gamma Ray (GAPI)	130
4	CCL	-0.25
300	TT3 (usec)	200
0	3' Amplitude (mV)	100
0	Amplified Amplitude (mV)	30
200	Variable Density	1200

Database File: oster c19-27d.db
Dataset Pathname: pass1
Presentation Format: cblx
Dataset Creation: Tue Jan 03 07:01:12 2012 by Log Std Casedhole 10121
Charted by: Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	180
4	CCL	-0.25
300	TT3 (usec)	200
0	3' Amplitude (mV)	100
0	Amplified Amplitude (mV)	30
200	Variable Density	1200

0	Gamma Ray (GAPI)	180
4	CCL	-0.25
300	TT3 (usec)	200
0	3' Amplitude (mV)	100
0	Amplified Amplitude (mV)	30
200	Variable Density	1200

Calibration Report

Database File: oster c19-27d.db
Dataset Pathname: pass2
Dataset Creation: Tue Jan 03 07:39:50 2012 by Log Std Casedhole 10121

Gamma Ray Calibration Report

Serial Number:	576	
Tool Model:	1.69TEKCO	
Performed:	Sun Jun 13 14:33:21 1993	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	1.0000	GAPI/cps

Cement Bond Log Calibration Report

Serial Number:	1		
Tool Model:	3-5tekco169		
Performed:	Tue Jan 03 07:39:12 2012		
Depth:	971	ft	
Casing Diameter:	4.5	in	
	3' Spacing	5' Spacing	
Signal Zero:	3	3	mV
Calibrated Amplitude:	81.1961	81.1961	mV
Reading at Signal Zero:	-0.75	0	V
Reading in Free Pipe:	2.5	2.5	V
Gain:	24.0603	31.2784	
Offset:	21.0453	3	