J-W WIRELINE COMPANY

CEMENT BOND
GAMMA RAY
COLLAR CORRELATION LOG

Company NOBLE ENERGY INC.
Well HERBST C 27-32D
Field WATTENBERG
County WELD
State COLORADO

Company	NOBLE ENERGY INC.
Well	HERBST C 27-32D
Field	WATTENBERG
County	WELD
State	COLORADO

Location: API # : 05-123-35327-00
SHL: 2049' FSL & 664' FWL NW SW
BHL: 2550' FSL & 75' FWL NW SW
SEC. 27 TWP. 4N RGE. 64W
SEC TWP RGE

Other Services: NONE

Permanent Datum	GROUND LEVEL	Elevation	4704
Log Measured From	KELLY BUSHING		
Drilling Measured From	KELLY BUSHING		

Elevation
K.B. 4717
D.F. 4717
G.L. 4704

Date	16-MAY-2012
Run Number	ONE
Depth Driller	7133
Depth Logger	7055
Bottom Logged Interval	7054
Top Log Interval	1440
Open Hole Size	7 7/8
Type Fluid	WATER
Density / Viscosity	--
Max. Recorded Temp.	240
Estimated Cement Top	1560
Time Well Ready	--
Time Logger on Bottom	--
Equipment Number	2405/TECKO
Location	BRIGHTON
Recorded By	HAYES
Witnessed By	MR. TROY SETTLE

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	820
Prot. String				
Production String	4.5	11.6#	SURFACE	7120
Liner				

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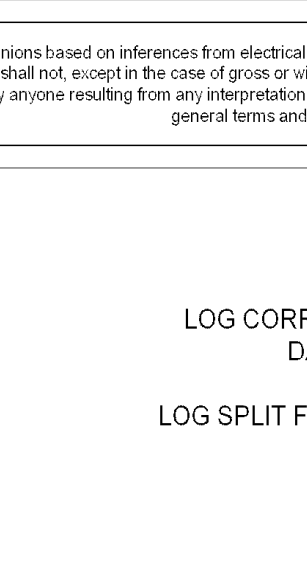
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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

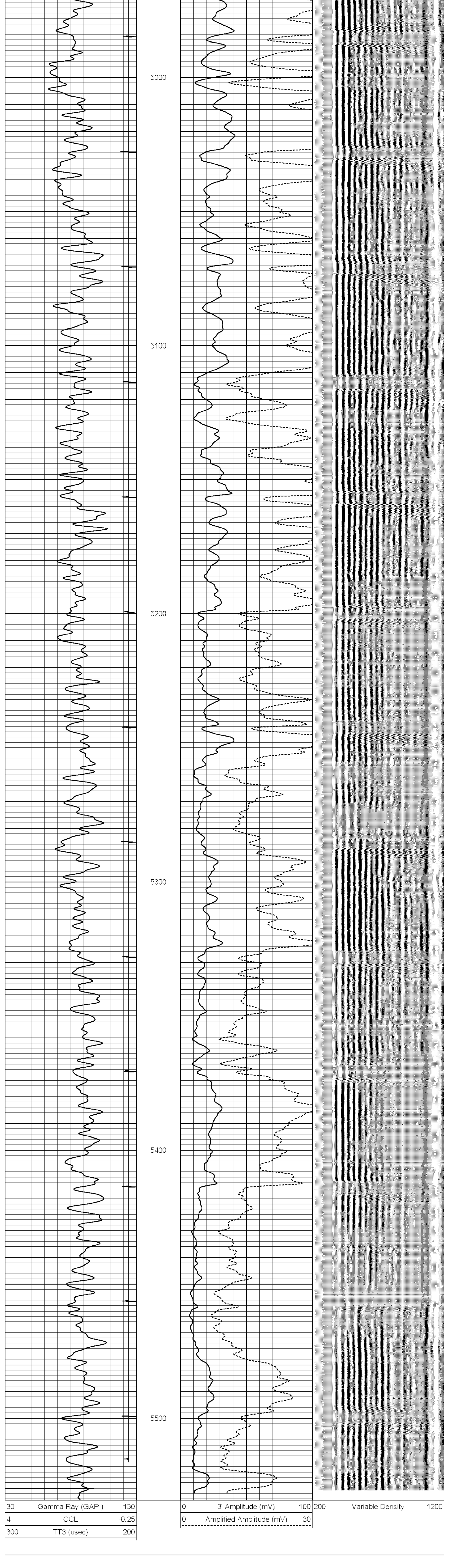
LOG CORRELATED TO CD, CN, ML LOG
DATED 30-APRIL-2012

LOG SPLIT FOR CORRELATION PURPOSES

Sensor	Offset (ft)	Schematic	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: herbst c 27-32d.db: field/well/run1/pass2
Total Length: 21.08 ft
Total Weight: 160.00 lb
O.D. 1.69 in

Database File: herbst c 27-32d.db
Dataset Pathname: pass2
Presentation Format: cblx
Dataset Creation: Thu May 17 01:43:31 2012 by Log Std Casedhole 10121
Charted by: Depth in Feet scaled 1:240



Database File: herbst c 27-32d.db
Dataset Pathname: pass1
Presentation Format: cblx
Dataset Creation: Thu May 17 01:15:36 2012 by Log Std Casedhole 10121
Charted by: Depth in Feet scaled 1:240

Calibration Report

Database File: herbst c 27-32d.db
Dataset Pathname: pass2
Dataset Creation: Thu May 17 01:43:31 2012 by Log Std Casedhole 10121

Gamma Ray Calibration Report

Serial Number:	576	
Tool Model:	1.69TEKCO	
Performed:	Thu Jan 12 13:03:35 2012	
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:	Wed May 16 23:13:39 2012		
Depth:	1125.48	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:	-0.27	0	V
Reading in Free Pipe:	2.5	2.5	V
Gain:	28.2296	31.2784	
Offset:	10.622	3	