J-W WIRELINE COMPANY

SECTOR BOND GAMMA RAY COLLAR LOG

Company	NOBLE ENERGY INC.
Well	CASTOR LC35-62HN
Field	WATTENBERG
County	WELD
State	COLORADO

Company NOBLE ENERGY INC.
Well CASTOR LC35-62HN
Field WATTENBERG
County WELD State COLORADO

Location: API #: 05-123-37507
SHL:SW SW
BHL:660' FSL & 660' FEL
SEC. 35 TWP. 9N RGE. 59W
SEC TWP RGE

Other Services
NONE

Permanent Datum	GROUND LEVEL	Elevation	4836
Log Measured From	KELLY BUSHING		
Drilling Measured From	KELLY BUSHING		

Elevation
K.B. 4852
D.F. ---
G.L. 4836

Date	25-SEPTEMBER-2013
Run Number	ONE
Depth Driller	10206
Depth Logger	6129
Bottom Logged Interval	6130
Top Log Interval	SURFACE
Open Hole Size	8 3/4
Type Fluid	WATER
Density / Viscosity	---
Max. Recorded Temp.	215
Estimated Cement Top	760
Time Well Ready	---
Time Logger on Bottom	---
Equipment Number	2401/TECKO
Location	BRIGHTON
Recorded By	HAYES
Witnessed By	MR. BILL MANSFIELD

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

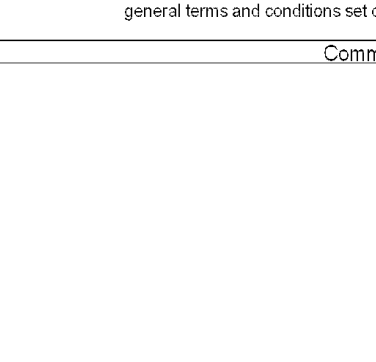
Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	9 5/8	33#	SURFACE	563.6
Prot. String				
Production String	4.5	11.6#	6229.2	10196
Liner	7.0	23#	SURFACE	6376.6

<<< 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

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
CCL	19.57		CCL-275tekco (2.75TEKCO) 2 3/4 TEK CCL Earth Mag	1.96	2.75	20.00
			CENT-TEKCO (101)	2.73	2.75	10.00
TEMP	12.78					
WVFS1	11.49		275CTEKSECWTWSLCANS-275RIB (1239.13 2 3/4" (R.I.B.) TOOL 3FT, 5FT and 8EA RIB SIGNALS 400 DEG "F" @20K PSI With Sliding Cans For Pressure Ballance		2.75	102.00
WVFS2	11.49					
WVFS3	11.49					
WVFS4	11.49					
WVFS5	11.49					
WVFS6	11.49					
WVFS7	11.49					
WVFS8	11.49					
WVF3FT	10.74					
WVFCAL	10.74					
WVFSYNC	10.74					
WVF5FT	9.74					
WVFTEMP	6.41					
			CENT-TEKCO (101)	2.73	2.75	10.00
			GR-TEKCO (101sgr)	3.68	2.75	30.00
GR	1.06					



Dataset: castor lc 35-62hn.db: field/well/run1/pass5
Total Length: 20.22 ft
Total Weight: 172.00 lb
O.D. 2.75 in

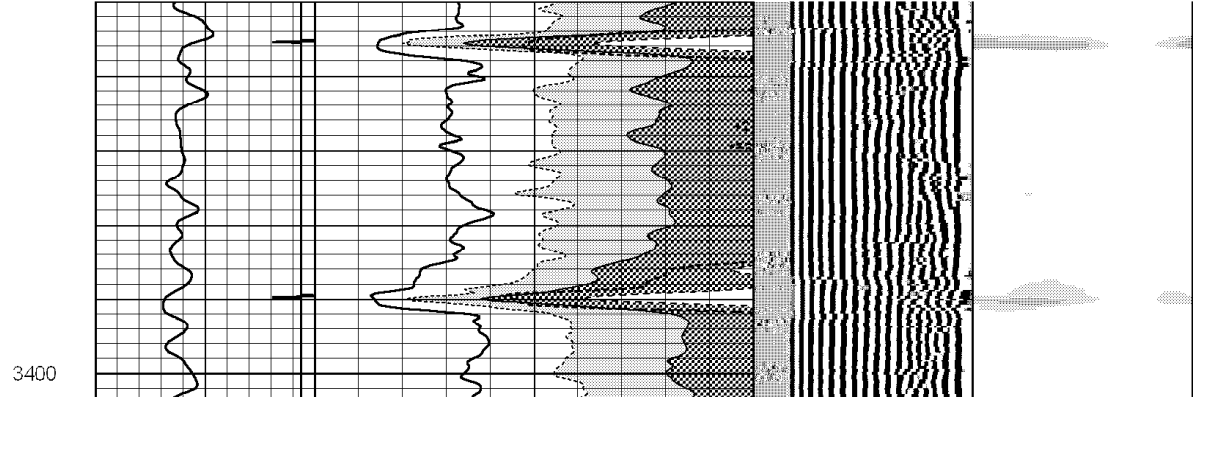
Database File: castor lc 35-62hn.db
Dataset Pathname: pass5
Presentation Format: scbl01
Dataset Creation: Wed Sep 25 12:59:48 2013 by Log SCH 111116
Charted by: Depth in Feet scaled 1:240

-15	CCL	1	0	Sector Average	150	200	VDL	1200	1	VAD	8
0	GR (GAPI)	200	0	Sector Maximum	150						
			0	Sector Minimum	150						
			0	Amplified Amplitude (mV)	30						
			0	Amplitude (mV)	100						

-15	CCL	1	0	Sector Average	150	200	VDL	1200	1	VAD	8
0	GR (GAPI)	200	0	Sector Maximum	150						
			0	Sector Minimum	150						
			0	Amplified Amplitude (mV)	30						
			0	Amplitude (mV)	100						

Database File: castor lc 35-62hn.db
Dataset Pathname: pass4
Presentation Format: scbl01
Dataset Creation: Wed Sep 25 11:58:08 2013 by Log SCH 111116
Charted by: Depth in Feet scaled 1:240

-15	CCL	1	0	Sector Average	150	200	VDL	1200	1	VAD	8
0	GR (GAPI)	200	0	Sector Maximum	150						
			0	Sector Minimum	150						
			0	Amplified Amplitude (mV)	30						
			0	Amplitude (mV)	100						



Calibration Report

Database File: castor lc 35-62hn.db
Dataset Pathname: pass5
Dataset Creation: Wed Sep 25 12:59:48 2013 by Log SCH 111116

Gamma Ray Calibration Report

Serial Number: 101sgr
Tool Model: TEKCO
Performed: Sun Jun 13 13:33:21 1993

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 1.0000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: 1234
Tool Model: 275RIB

Calibration Casing Diameter: 7.000 in
Calibration Depth: 909.208 ft

Master Calibration, performed Wed Sep 25 10:38:11 2013:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	2.499	3.000	62.165	23.673	3.000
CAL	0.000	0.180				
5'	0.000	2.500	3.000	62.165	23.666	3.000
SUM						
S1	0.000	2.500	0.000	100.000	40.000	0.000
S2	0.000	2.500	0.000	100.000	40.000	0.000
S3	0.000	2.500	0.000	100.000	40.000	0.000
S4	0.000	2.446	0.000	100.000	40.884	0.000
S5	0.000	1.837	0.000	100.000	54.444	0.000
S6	0.000	1.374	0.000	100.000	72.761	0.000
S7	0.000	1.294	0.000	100.000	77.308	0.000
S8	0.000	1.708	0.000	100.000	58.536	0.000

Internal Reference Calibration, performed Wed Dec 31 17:00:00 1969:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.000	0.180	1.000	0.000

Air Zero Calibration, performed Mon Sep 11 12:40:00 2006:

	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

Temperature Calibration Report

Serial Number: 1234
Tool Model: 275RIB
Performed: Sat May 31 10:25:43 2008

	Reference	Reading
Low Reference:	75.00 degF	300.00 usec
High Reference:	400.00 degF	1282.00usec

Gain: 0.33
Offset: 44.00
Delta Spacing 1