Company	Noble Energy Inc.
Well	Ritchey H 27-21
Field	Wattenberg
County	Weld
State	Colorado

HALLIBURTON

Cement Bond Log
Gamma Ray
CCL

Scale 1:240

Company	Noble Energy Inc.
Well	Ritchey H 27-21
Field	Wattenberg
County	Weld
State	Colorado

API No.: 05-123-25904-00 Serv #:
Location: 2575' FSL & 250' FWL
NE SW

Other Services
None

Sec: 27 Twp: 3N Rge: 65W

Permanent Datum GL Elevation 4817
Log Measured From KB 14 Ft. above perm. datum
Drilling Measured From KB

Elevation
K.B. 4831
D.F. 4830
G.L. 4817

Date @ Time Logged	7-July-08	Type Fluid in Hole	Water
Run No.	One	Density of Fluid	8.4
Depth - Driller	7728	Fluid Level	Surface
Depth - Logger	7709	Cement Top Est. Logged	1460
Bottom - Logged Interval	7707	Equipment / Location	10842985 / Brighton
Top - Log Interval	1210	Recorded by	Michael Snyder
Max. Recorded Temp.	N/A	Witnessed by	Scott Armstrong

CEMENTING DATA	Surface String	Protection String	Production String	Liner
Date / Time Cemented				
Primary / Squeeze				
Expected Compressive Strength	psi@ hrs	psi@ hrs	psi@ hrs	psi@ hrs
Cement Type / Weight	/	/	/	/
Cement Volume				
Formulation				
Mud Type / Mud Wgt.	/	/	/	/

Borehole Record				Casing & Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
One				4.5	11.6	Surface	TD

<<< Fold Here >>>

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHCIH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

Comments

Cement Bond Log was correlated to Compensated Density/Neutron Microlog recorded by PSI dated 29

Thank you for choosing Halliburton

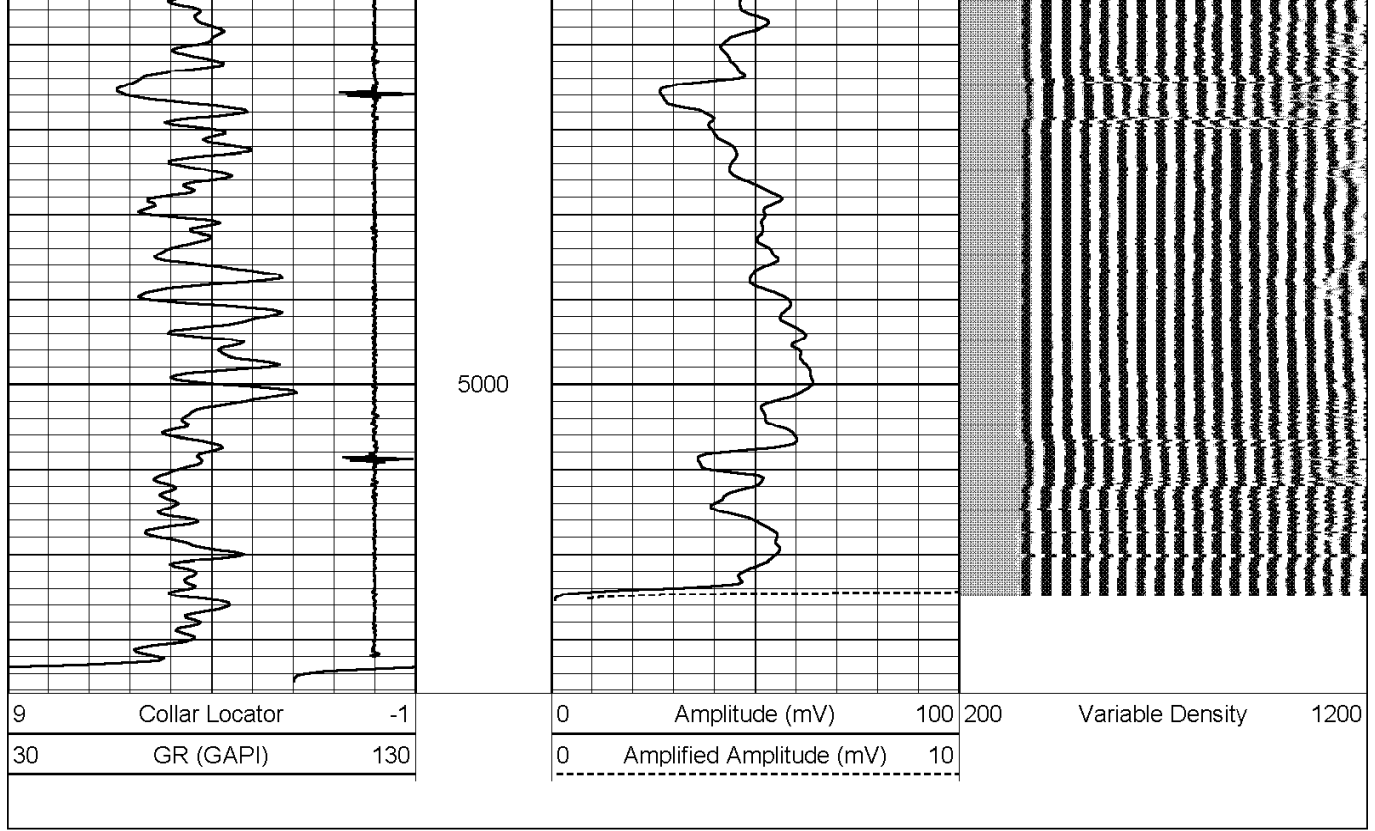
Your crew today: Michael Snyder, Jake Walker, Jason Morrison, Jared Brebrick and Jose Calderon

HALLIBURTON

Sussex Pass

Scale 1:240

Database File:	noble_ritchey_h 27-21.db
Dataset Pathname:	pass4
Presentation Format:	cbldig
Dataset Creation:	Tue Jul 08 02:40:25 2008 by Log Halliburton Casedho
Charted by:	Depth in Feet scaled 1:240



HALLIBURTON

Sussex Pass

Scale 1:240

HALLIBURTON

Main Pass

Scale 1:240

Database File: noble_ritchey_h 27-21.db
Dataset Pathname: pass3
Presentation Format: cbldig
Dataset Creation: Tue Jul 08 02:10:54 2008 by Log Halliburton Casedho
Charted by: Depth in Feet scaled 1:240

HALLIBURTON

Main Pass

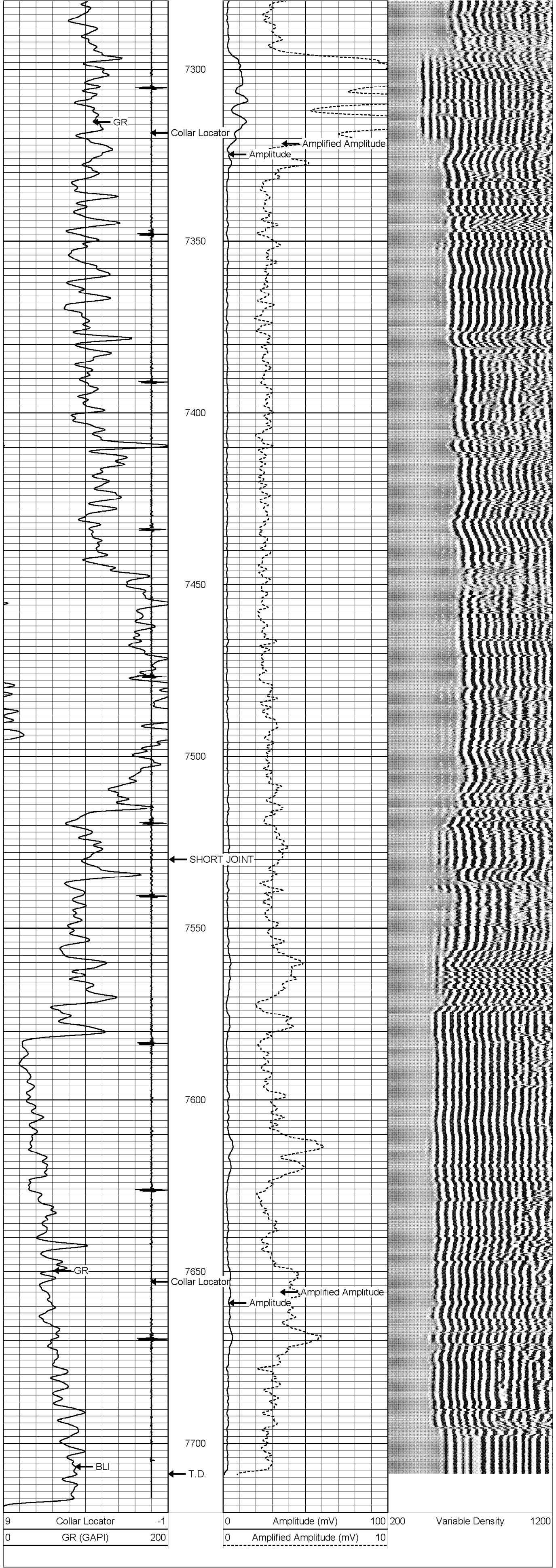
Scale 1:240

HALLIBURTON

J-Sand Pass

Scale 1:240

Database File: noble_ritchey_h 27-21.db
Dataset Pathname: pass2
Presentation Format: cbldig
Dataset Creation: Tue Jul 08 02:00:38 2008 by Log Halliburton Casedho
Charted by: Depth in Feet scaled 1:240



HALLIBURTON

J-Sand Pass

Scale 1:240

Calibration Report

Database File: noble_ritchey_h 27-21.db
Dataset Pathname: pass2
Dataset Creation: Tue Jul 08 02:00:38 2008 by Log Halliburton Casedho

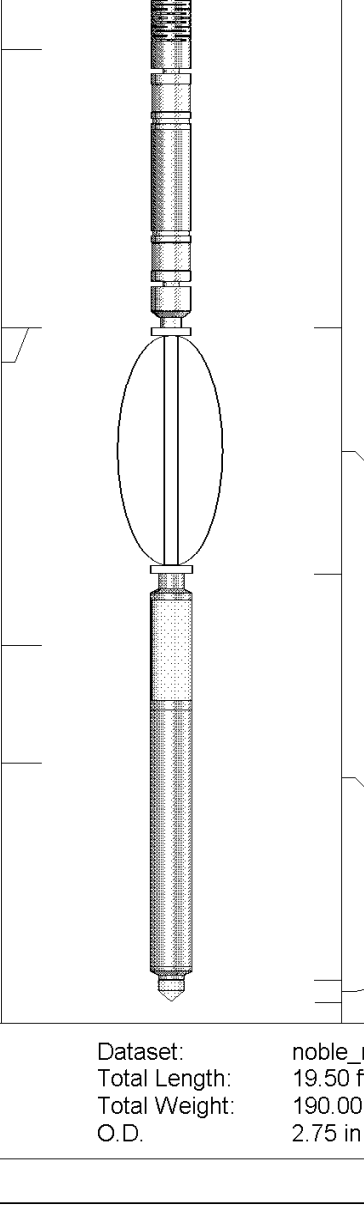
Gamma Ray Calibration Report

Type / Serial: probe275dig / pr050806

	Counts/Sec.	Gain	Offset	Jig	Units
SHOP CALIBRATION	Wed Oct 24 07:43:23 2007				
Background	107.0				cps
Calibrator	423.6				cps
		0.7517			GAPI/cps
PRIMARY VERIFICATION	Wed Oct 24 07:46:19 2007				
Background	80.9				cps
Calibrator	315.3				cps
Difference				234.4	GAPI
BEFORE SURVEY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI
AFTER SURVEY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

CBL Calibration Report

Serial Number:	040201	
Tool Model:	PRB275_Dig	
Performed:	Mon Jul 07 22:12:36 2008	
Depth:	903.071	ft
Casing Diameter:	5.500	in
	3' Spacing	
Signal Zero:	1.000	mV
Calibrated Amplitude:	82.000	mV
Reading at Signal Zero:	0.001	V
Reading in Free Pipe:	0.540	V
Gain:	150.285	
Offset:	0.857	

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			Probe_275 Probe 2 3/4 Centralizer	2.88	2.75	20.00
WVF3FT WVF5FT	12.13 11.13		CBL_PRB275D-PRB275_Dig (040201) Probe 2 3/4" Digital 3' & 5' Bond - Move voltage to +/- 150 for cal mode	8.75	2.75	92.00
ProbeHV IntTemp	7.88 7.88					
			Probe_275 Probe 2 3/4 Centralizer	2.88	2.75	20.00
CCL	4.17					
GR	2.79		GR_PRB275-probe275dig (pr050806) Probe Digital Gamma CCL	4.75	2.75	57.00
			STD-Standard (0000)	0.25	0.00	1.00

Dataset: noble_ritchey_h 27-21.db: field/well/run1/pass2
Total Length: 19.50 ft
Total Weight: 190.00 lb
O.D. 2.75 in

Company	Noble Energy Inc.		
Well	Ritchey H 27-21		
Field	Wattenberg		
County	Weld	State	Colorado

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