PHOENIX SURVEYS, INC.

Cement Bond Log
Gamma Ray-CCL-VDL

Company Black Raven Energy, INC
Well Harry Geyer A-3
Field Adena
County Morgan
State Colorado

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Field Adena
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Location: API # : 05-087-05430

1650 FSL & 2265 FWL

SEC 6 TWP 1N RGE 57W

Other Services

Permanent Datum Ground Level Elevation 4492'
Log Measured From Kelly Bushing
Drilling Measured From Kelly Bushing

Elevation
K.B. 4502'
D.F. 4501'
G.L. 4492'

Date	Oct 24,2011		
Run Number	1		
Depth Driller	5663'		
Depth Logger			
Bottom Logged Interval			
Top Log Interval			
Open Hole Size	7 7/8		
Type Fluid	Water		
Density / Viscosity	N/A		
Max. Recorded Temp.	N/A		
Estimated Cement Top	N/A		
Time Well Ready	N/A		
Time Logger on Bottom	N/A		
Equipment Number	#54		
Location	Ft Morgan		
Recorded By	Josh Horton		
Witnessed By	Roger Pape		

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

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String				
Prot. String				
Production String	5.5"	15.5#	Surface	5663"
Liner				

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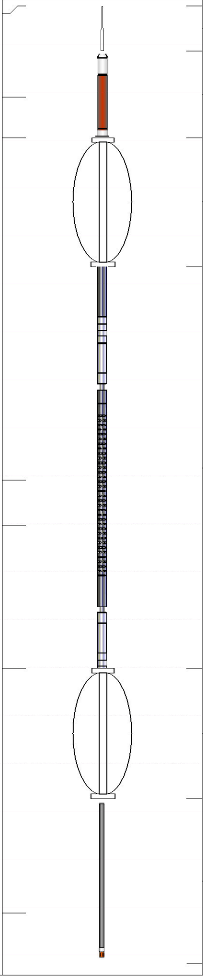
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

Thank You For Using Phoneix Surveys!!
SO# 201839

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
CHD	21.25		STNDRD Standard Cable Head	1.00	1.69	1.00
CCL	19.23		CCL-titan01 (TITLOG)	1.92	2.75	
CENT	18.33					
			SDSCENT Centralizer	2.88	2.75	20.00
			CBL-Probe (050215) Probe 2.75" Dual Receiver Bond	8.92	2.75	60.00
WVF3	10.73					
WVF5	9.73					
CENT	6.54					
			SDSCENT Centralizer	2.88	2.75	20.00
			GR-probe 2.75 (51013)	3.67	2.75	100.00
GR	1.13					

Dataset: hairy_dire.db: field/well/run1/pass2
Total Length: 21.25 ft
Total Weight: 201.00 lb
O.D. 2.75 in

Calibration Report

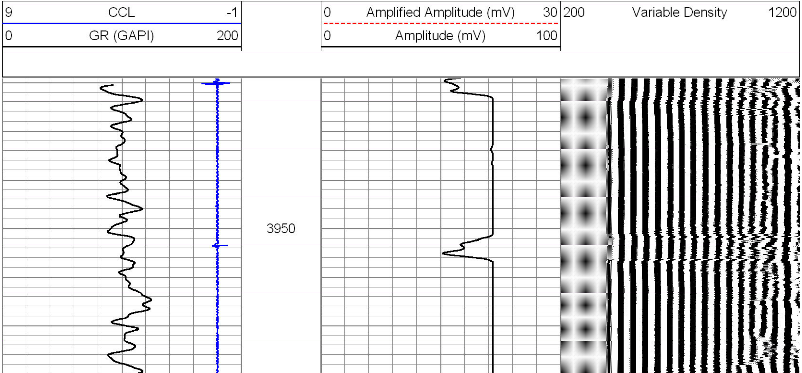
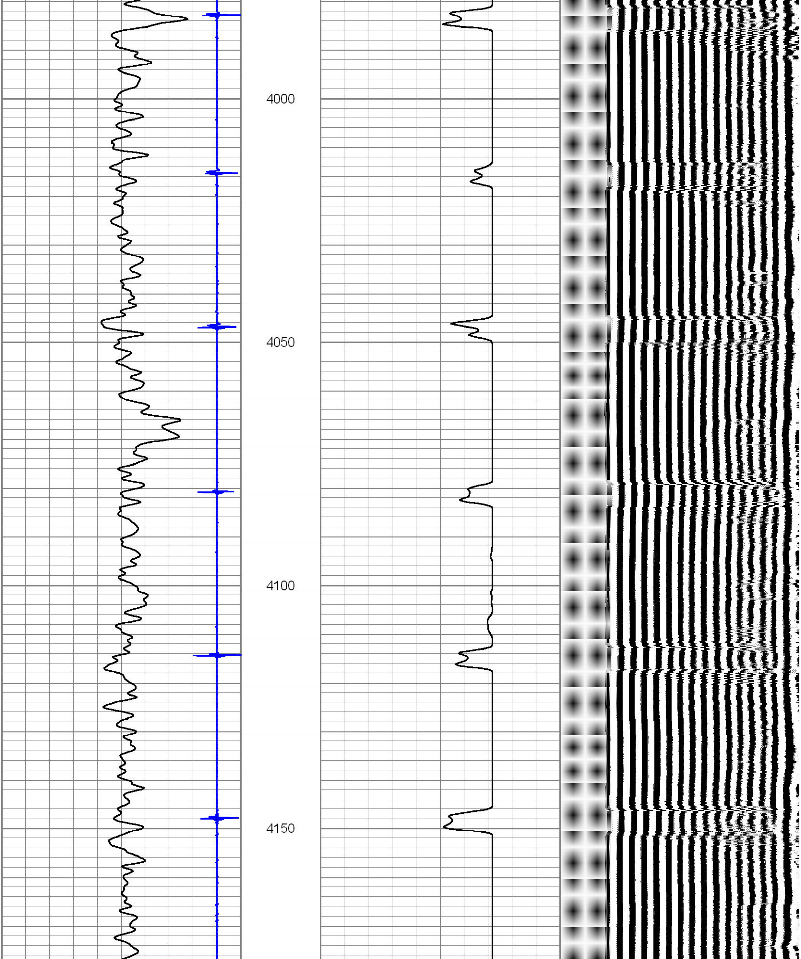
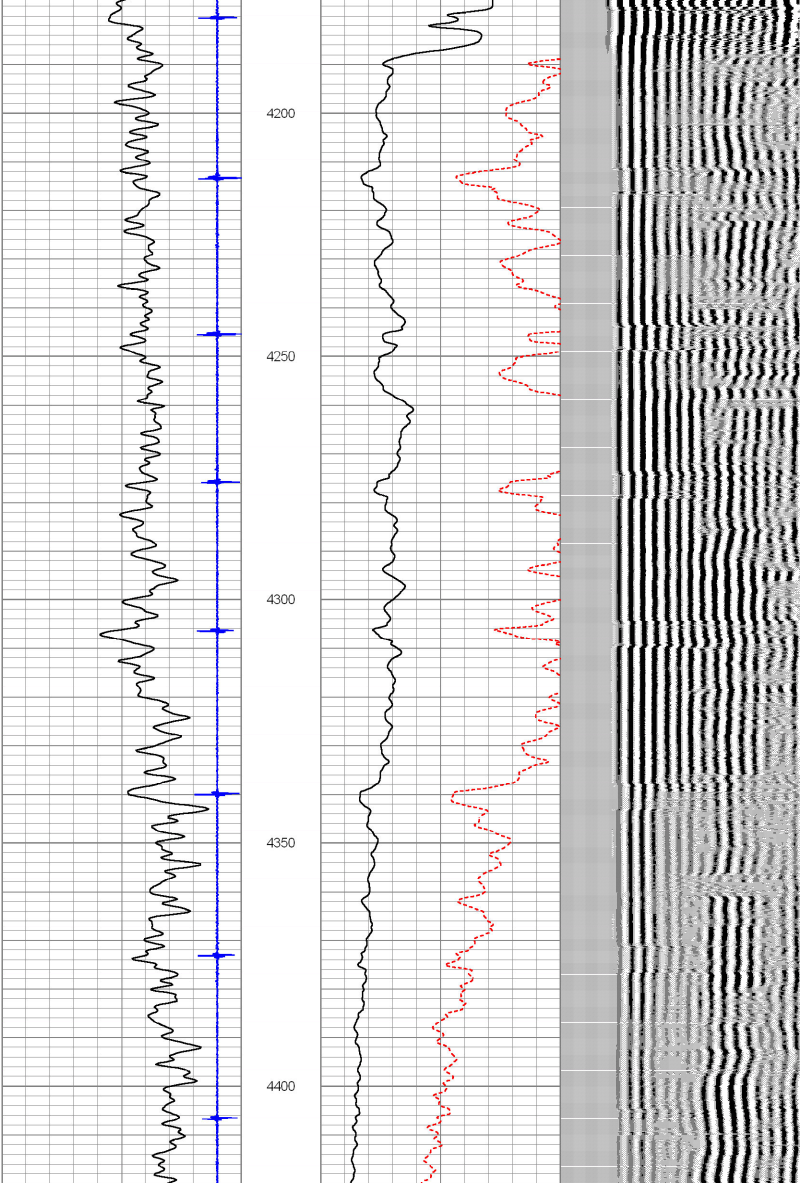
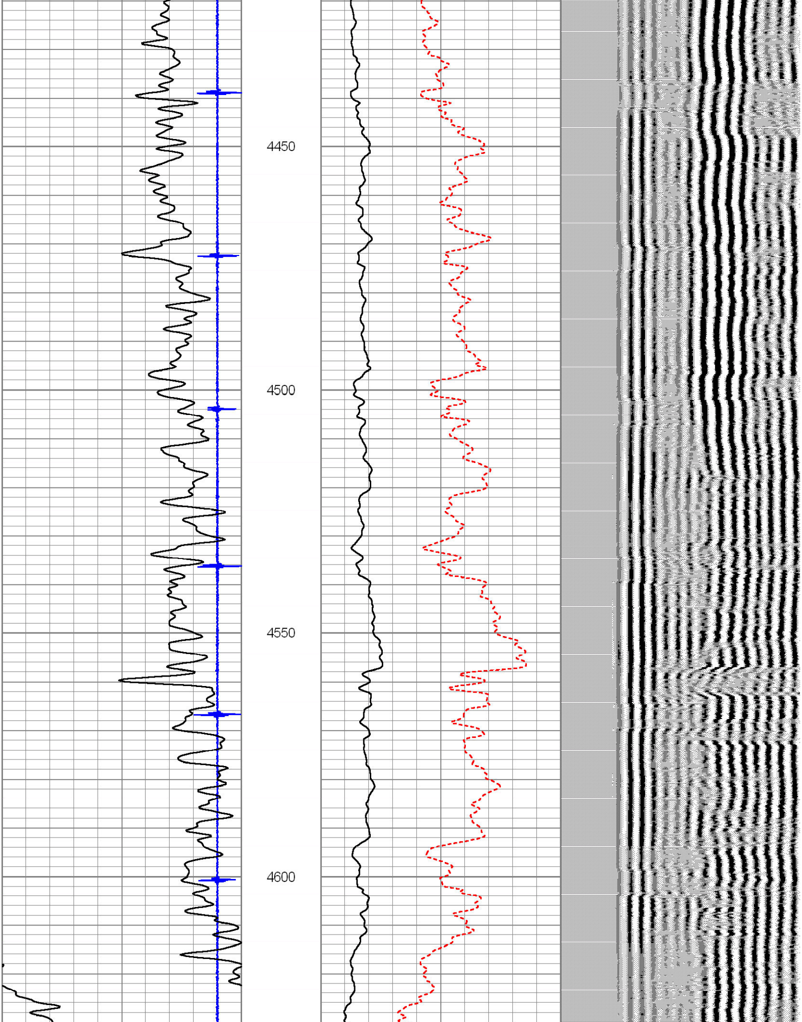
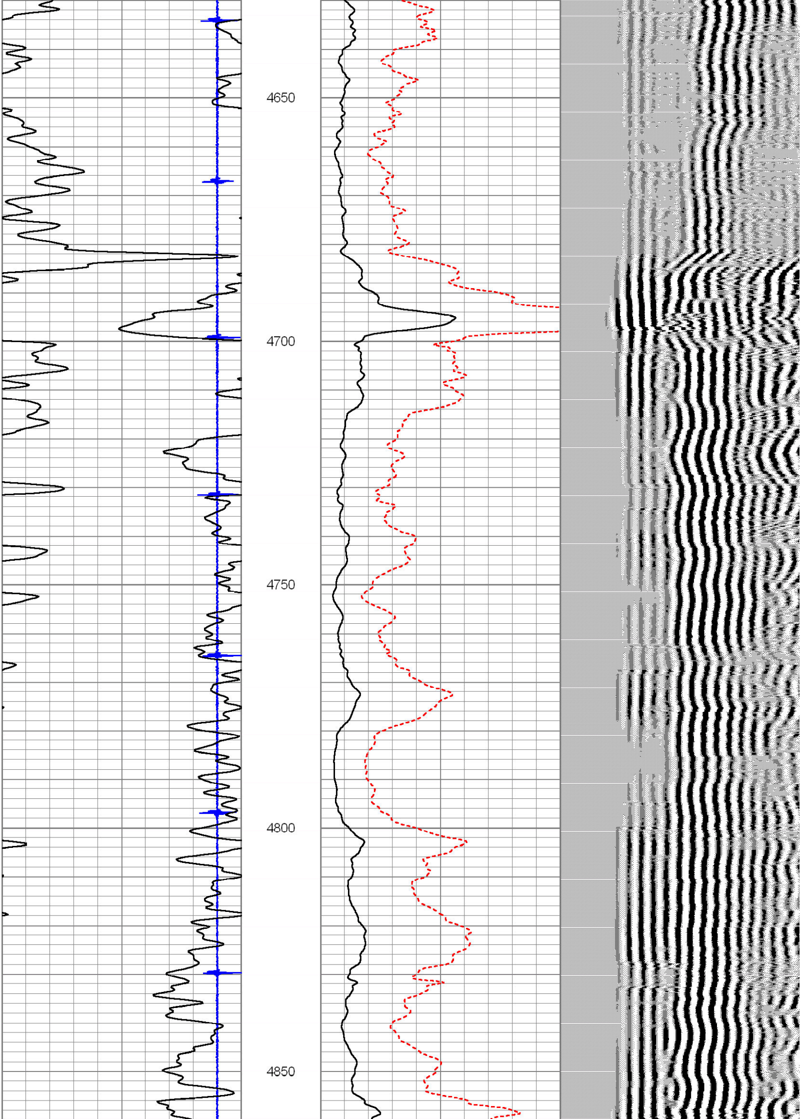
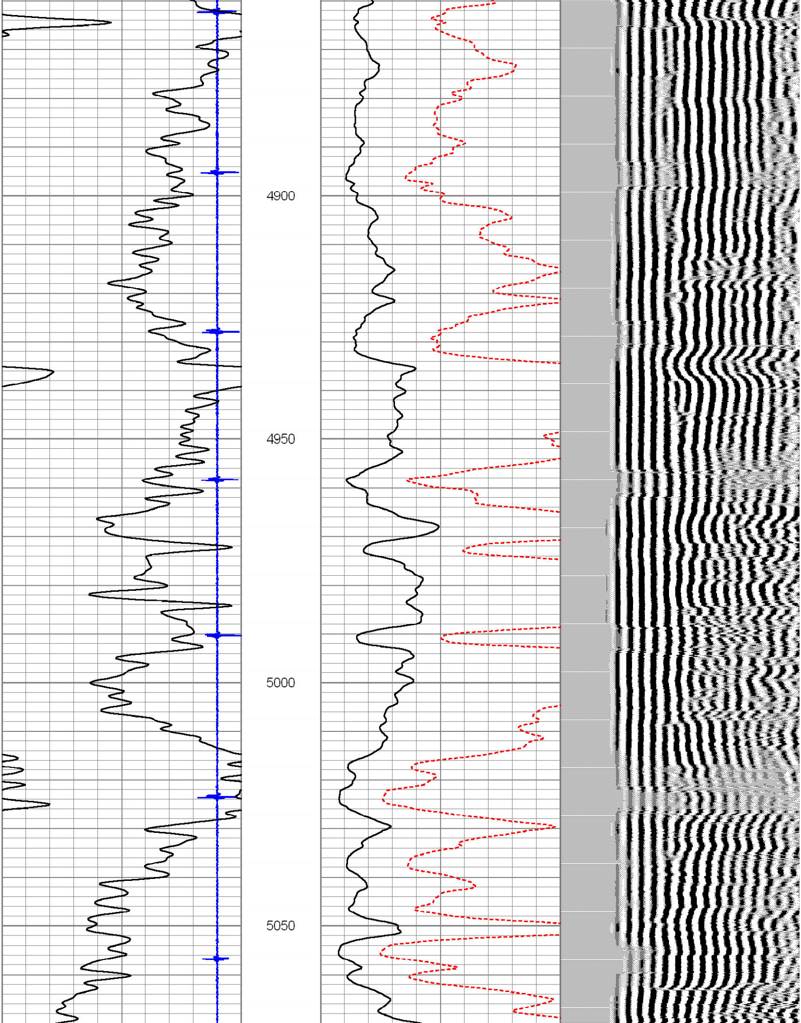
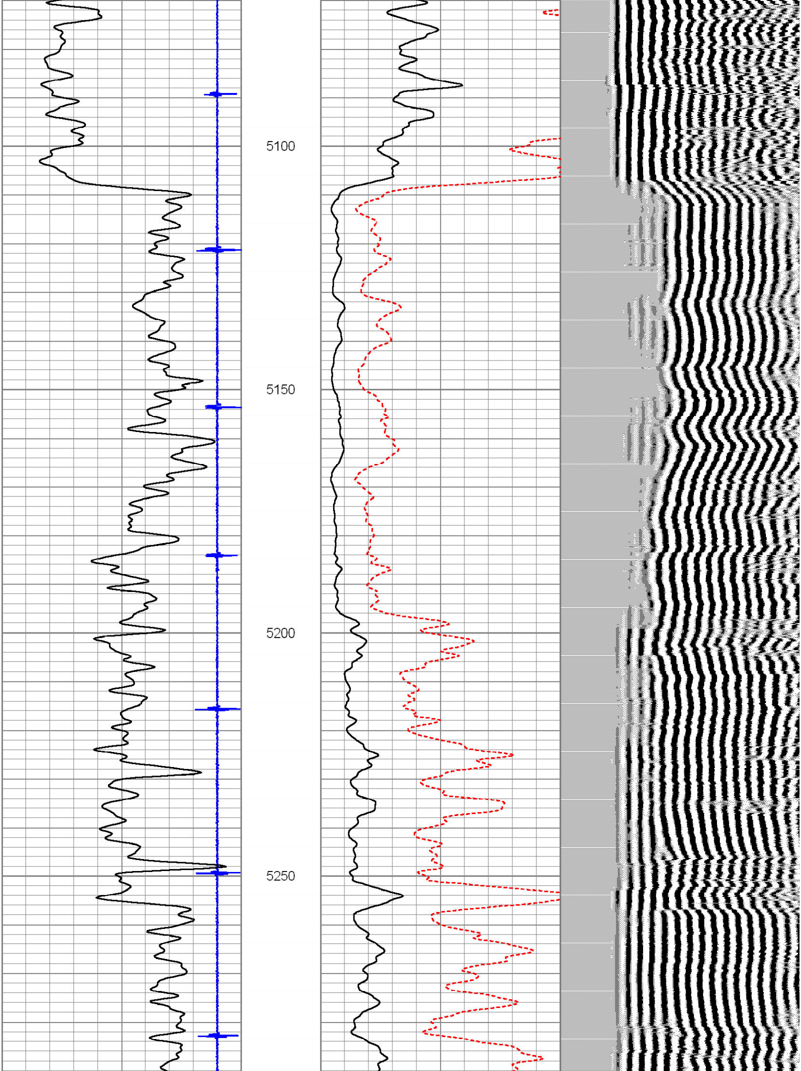
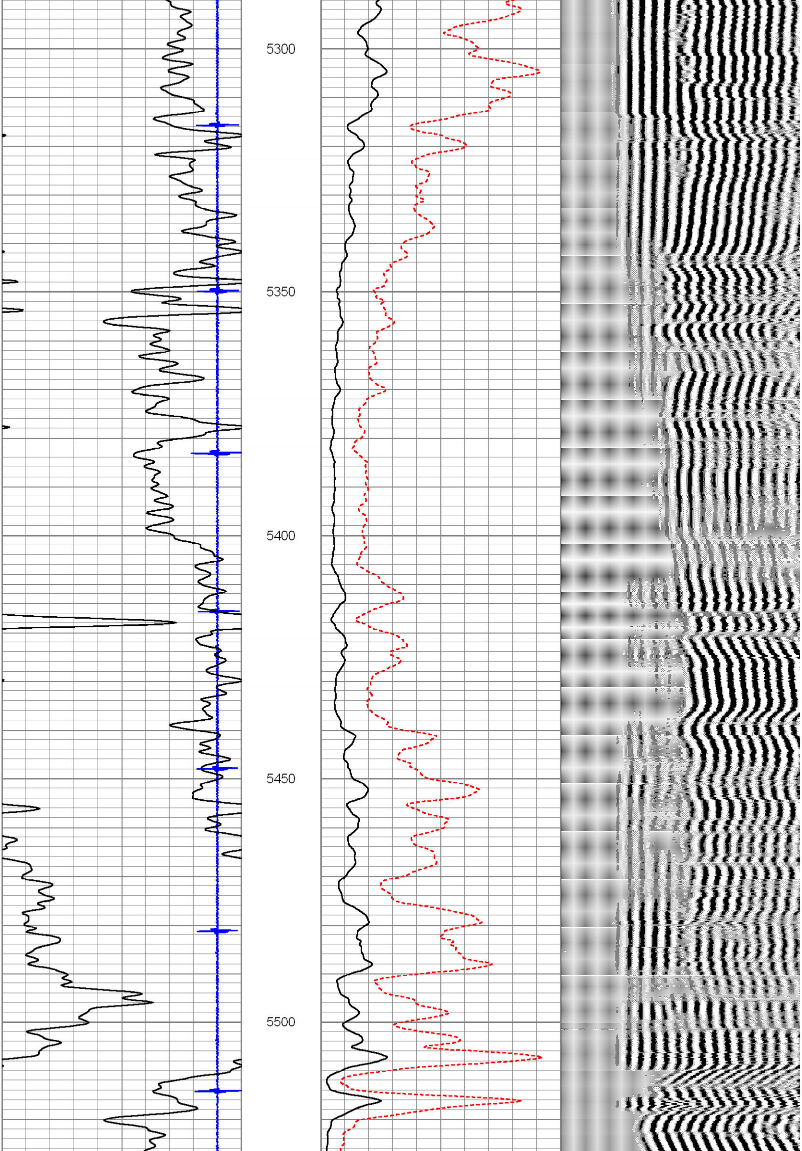
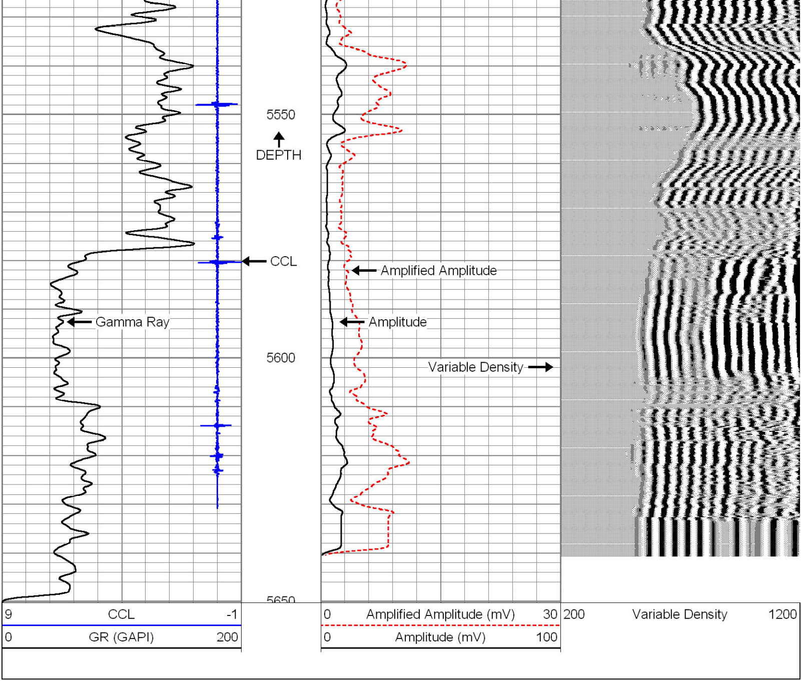
Database File:	hairy_dire.db
Dataset Pathname:	pass2
Dataset Creation:	Mon Oct 24 14:18:08 2011 by Log Std Casedhole 10081

Gamma Ray Calibration Report

Serial Number:	51013	
Tool Model:	probe 2.75	
Performed:	Mon Sep 22 09:55:30 2008	
Calibrator Value:	1400.0	GAPI
Background Reading:	26.8	cps
Calibrator Reading:	1120.0	cps
Sensitivity:	0.9000	GAPI/cps

Cement Bond Log Calibration Report

Serial Number:	050215		
Tool Model:	Probe		
Performed:	Mon Oct 24 14:02:59 2011		
Depth:	4128.98	ft	
Casing Diameter:	5.5	in	
	3' Spacing	5' Spacing	
Signal Zero:	0	0	mV
Calibrated Amplitude:	71.921	71.921	mV
Reading at Signal Zero:	-0.02	0.00720215	V
Reading in Free Pipe:	2.49878	2.49878	V
Gain:	28.5539	28.8657	
Offset:	0.571078	-0.207895	

Database File:	hairy_dire.db
Dataset Pathname:	pass2
Presentation Format:	cbl_dr
Dataset Creation:	Mon Oct 24 14:18:08 2011 by Log Std Casedhole 10081
Charted by:	Depth in Feet scaled 1:240