NABORS
COMPLETION & PRODUCTION SERVICES CO.

GAMMA RAY CCL
CEMENT BOND SECTOR VDL

Company NOBLE ENERGY INC.
Well SAUER F33-77-1HNX
Field WATTENBERG
County WELD State COLORADO

Location: API #: 0512337261
BHL: 735' FNL & 1650' FWL
SE/SW
SEC 33 TWP 5N RGE 65W

Other Services

Permanent Datum	GL	Elevation 4671	Elevation
Log Measured From	KB		K.B. 4683
Drilling Measured From	KB		D.F.
			G.L. 4671

Company	NOBLE ENERGY INC.		
Well	SAUER F33-77-1HNX		
Field	WATTENBERG		
County	WELD		
State	COLORADO		

Date	MAY 30, 2013
Run Number	ONE
Depth Driller	10971
Depth Logger	6844
Bottom Logged Interval	6844
Top Log Interval	SURFACE
Open Hole Size	8-3/4
Type Fluid	WATER
Density / Viscosity	N/A
Max. Recorded Temp.	235°F
Estimated Cement Top	1130
Time Well Ready	PORTABLE MAST
Time Logger on Bottom	2-3/4 PROBE 101020
Equipment Number	4838
Location	45
Recorded By	GREG NOLAN
Witnessed By	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	36# J-55	13	592
Prot. String				
Production String	7	26# P-110	13	7205
Liner	4-1/2	11.6# P-110	7099.1	10995

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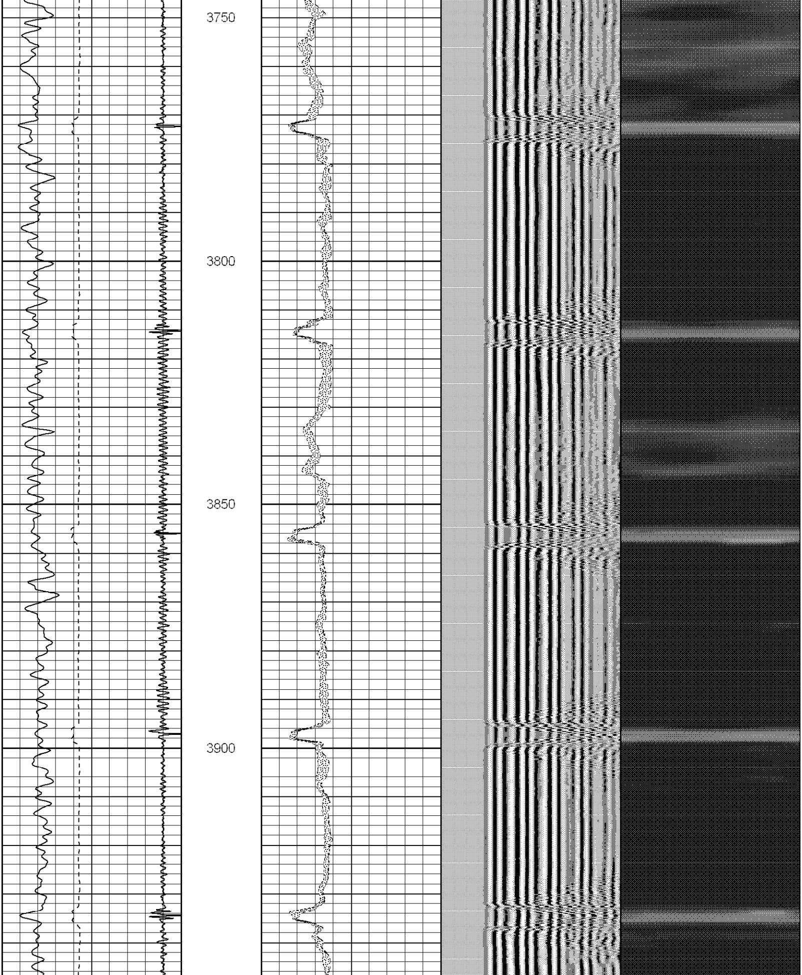
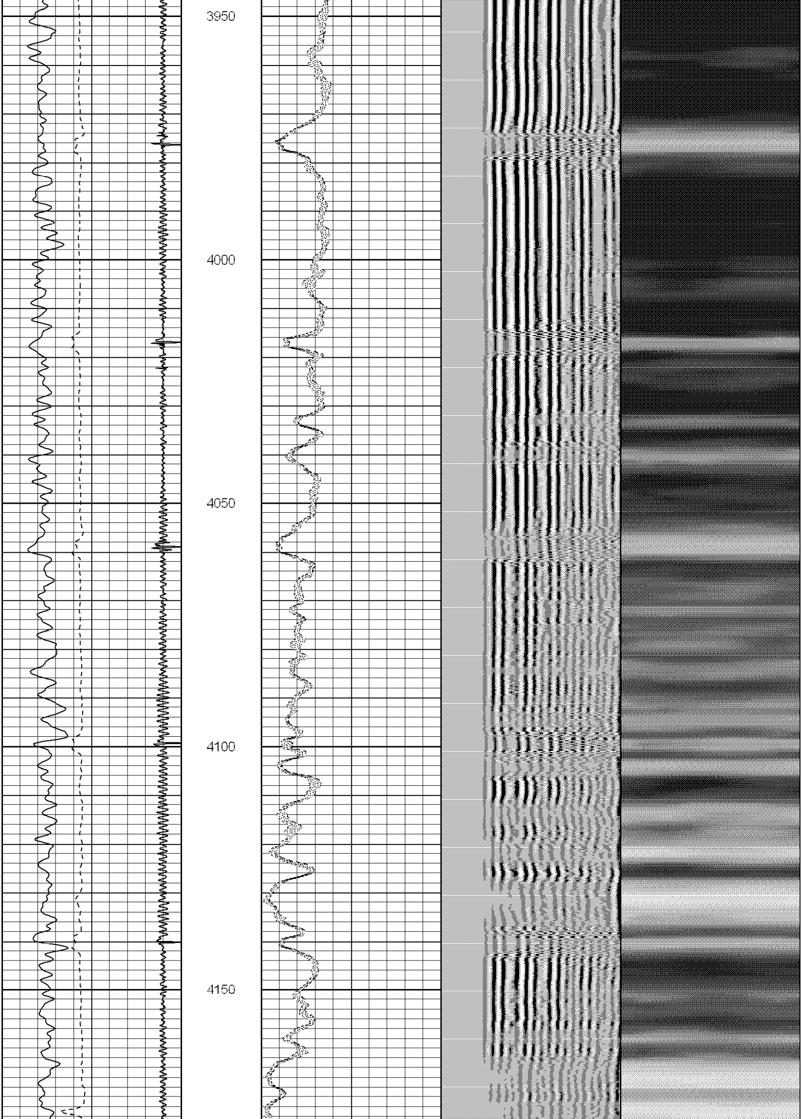
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

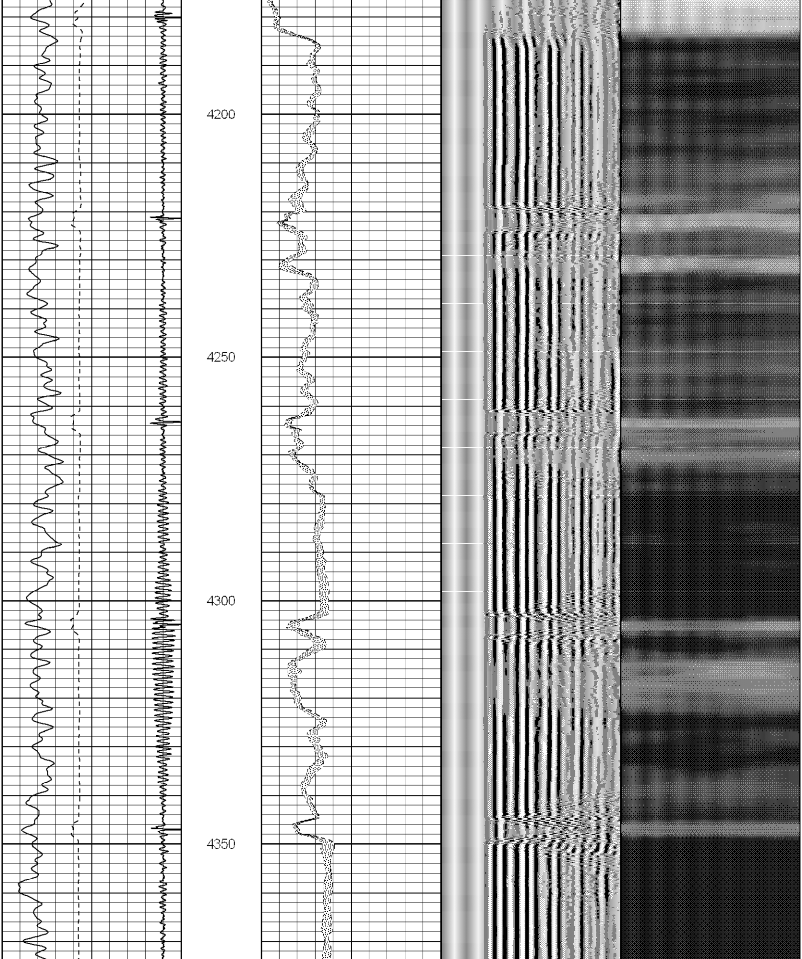
Comments

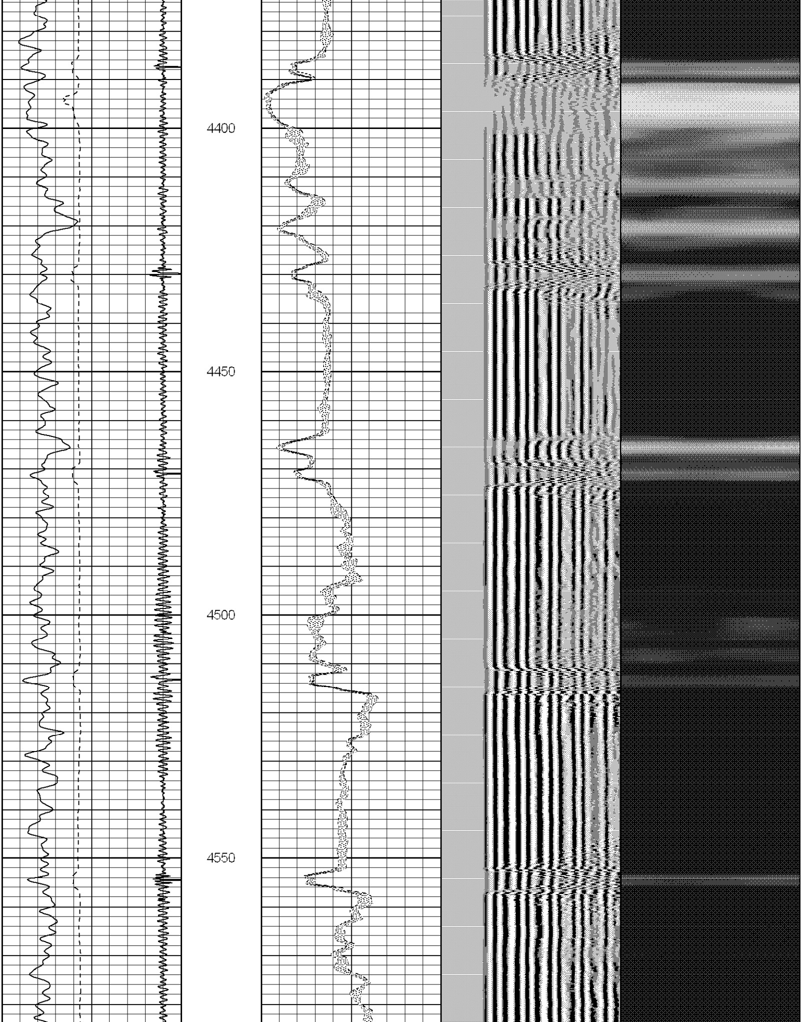
THANK YOU FOR CHOOSING NCPS!!!!
LOG NOT CORRELATED
WCR 50 & WCR 41, E.1, N INTO
EASTERNMOST WELL OF A 7 WELL PAD

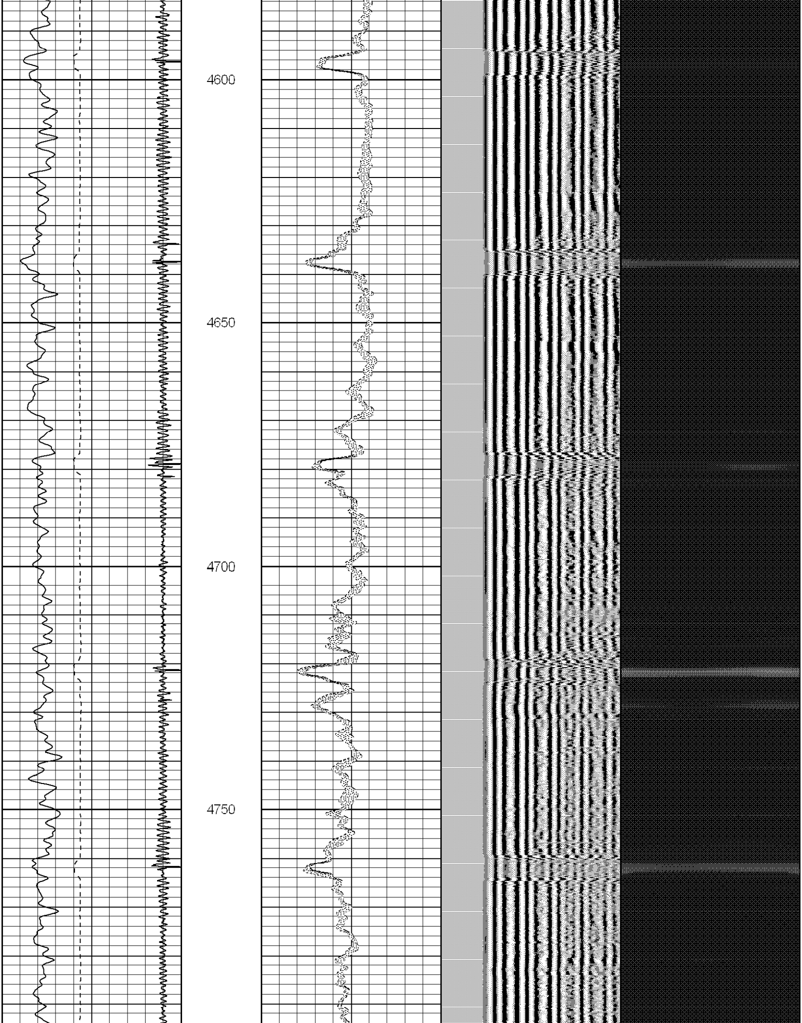
Database File:	cbl noble sauer f33-77-1hnx.db
Dataset Pathname:	pass3
Presentation Format:	sector2
Dataset Creation:	Thu May 30 11:49:23 2013 by Log SCH 120430
Charted by:	Depth in Feet scaled 1:240

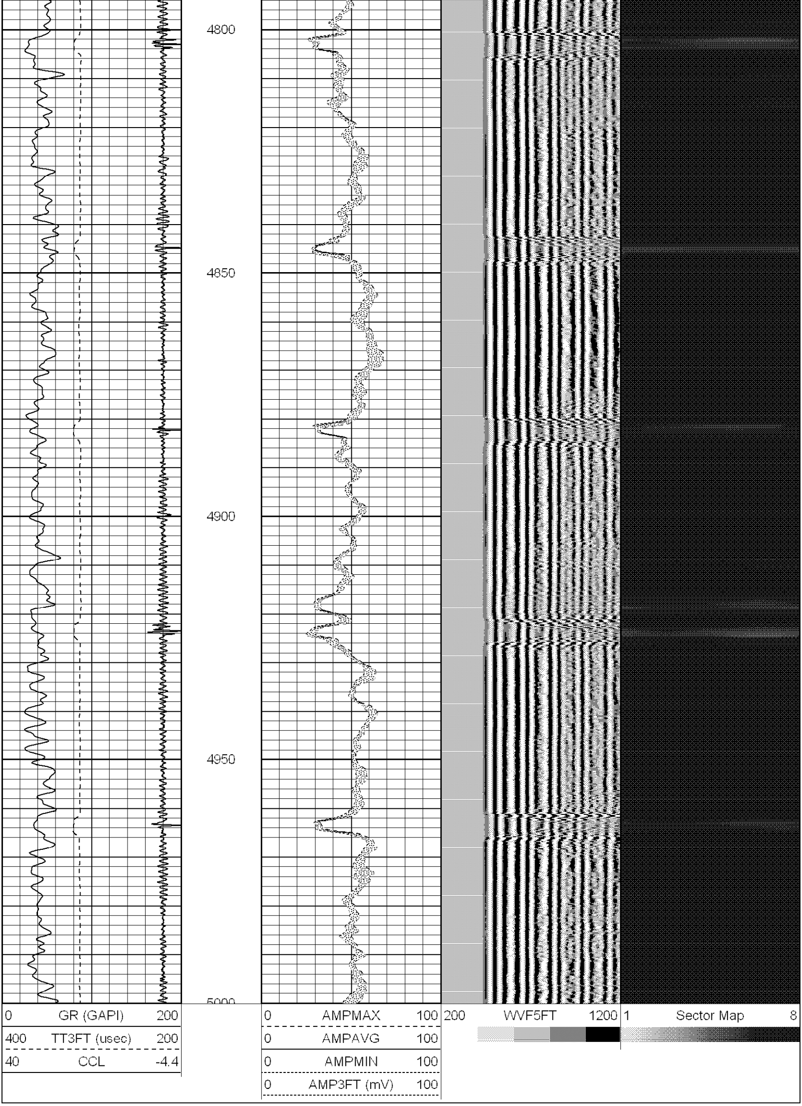




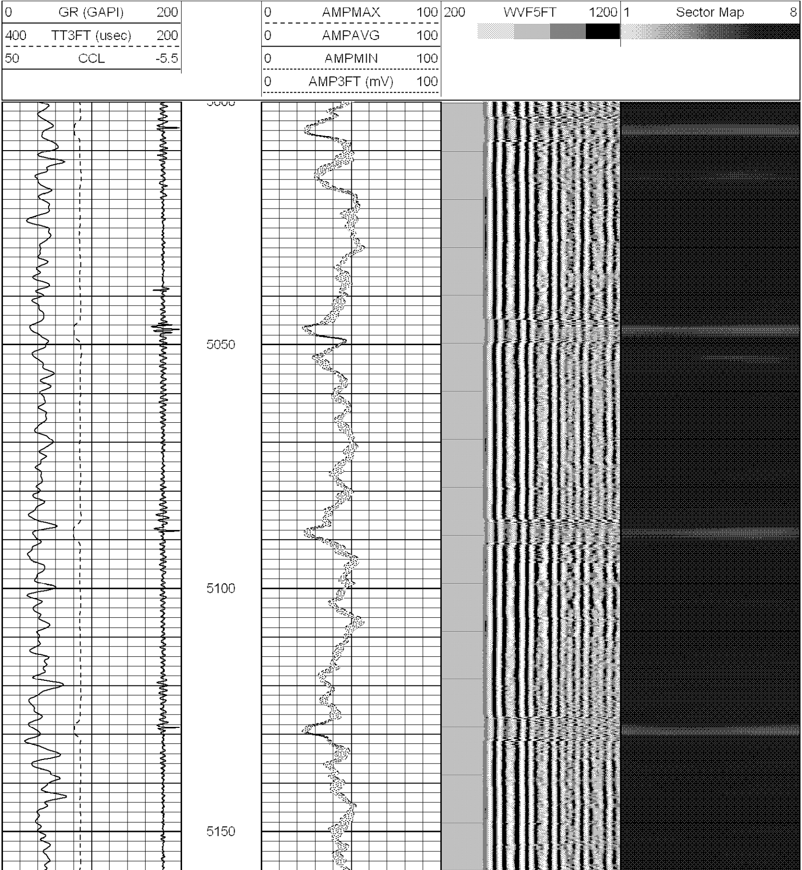


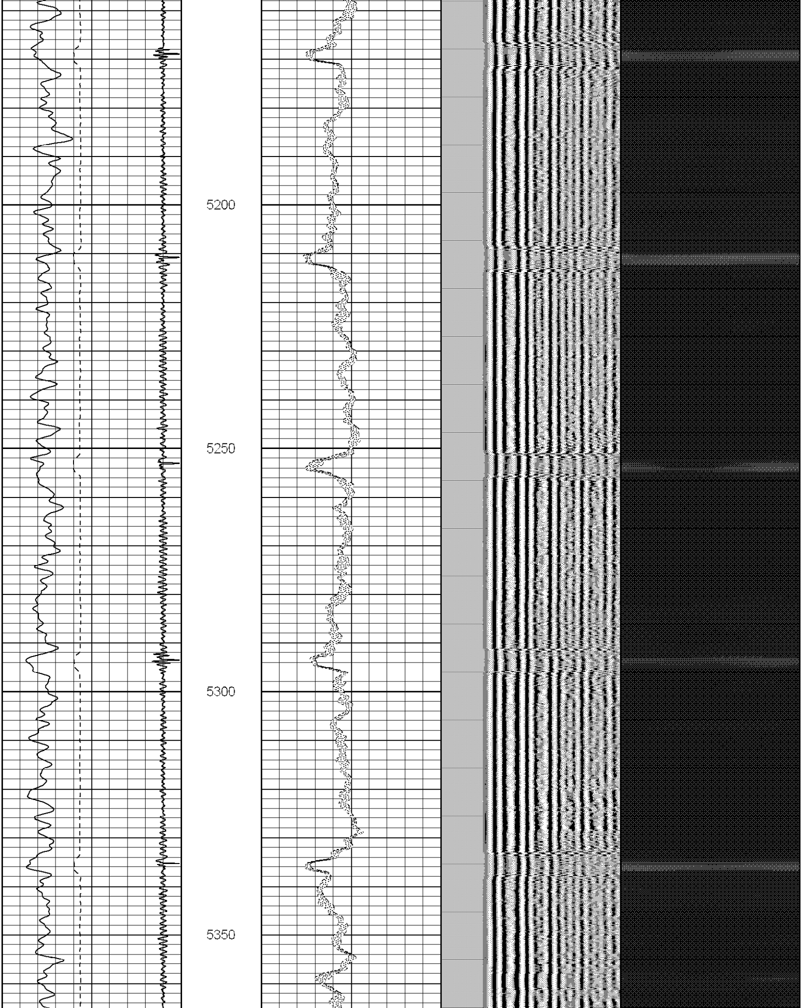


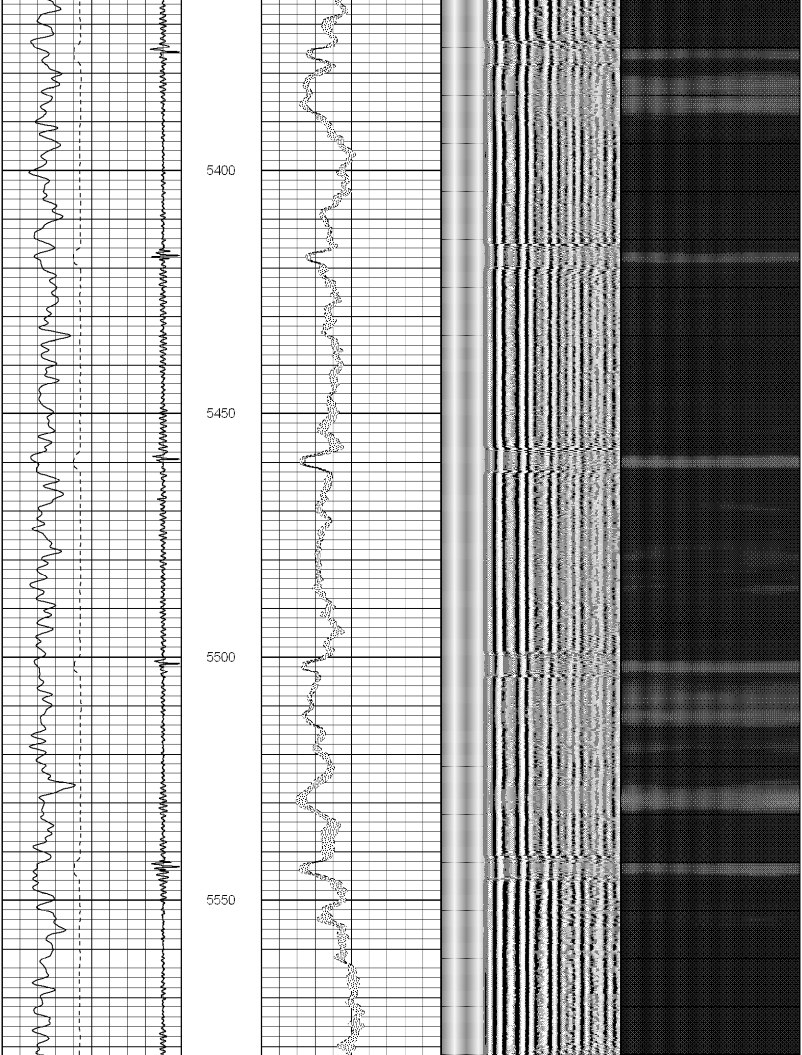


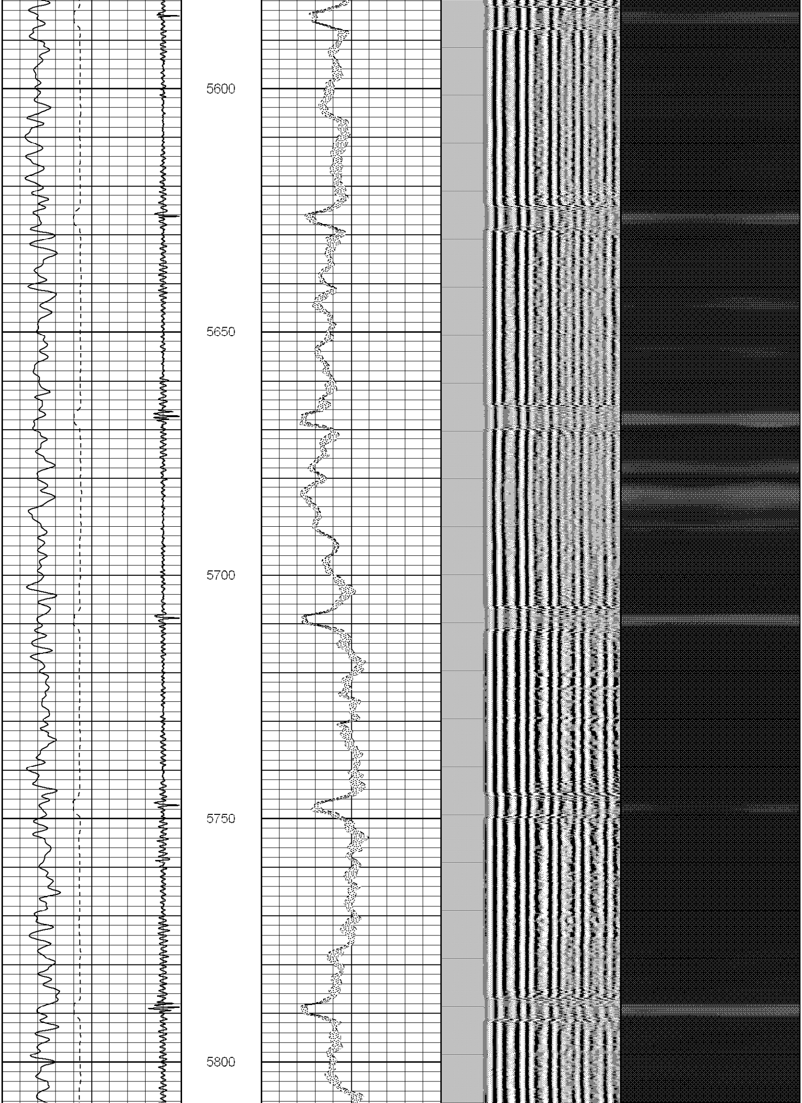


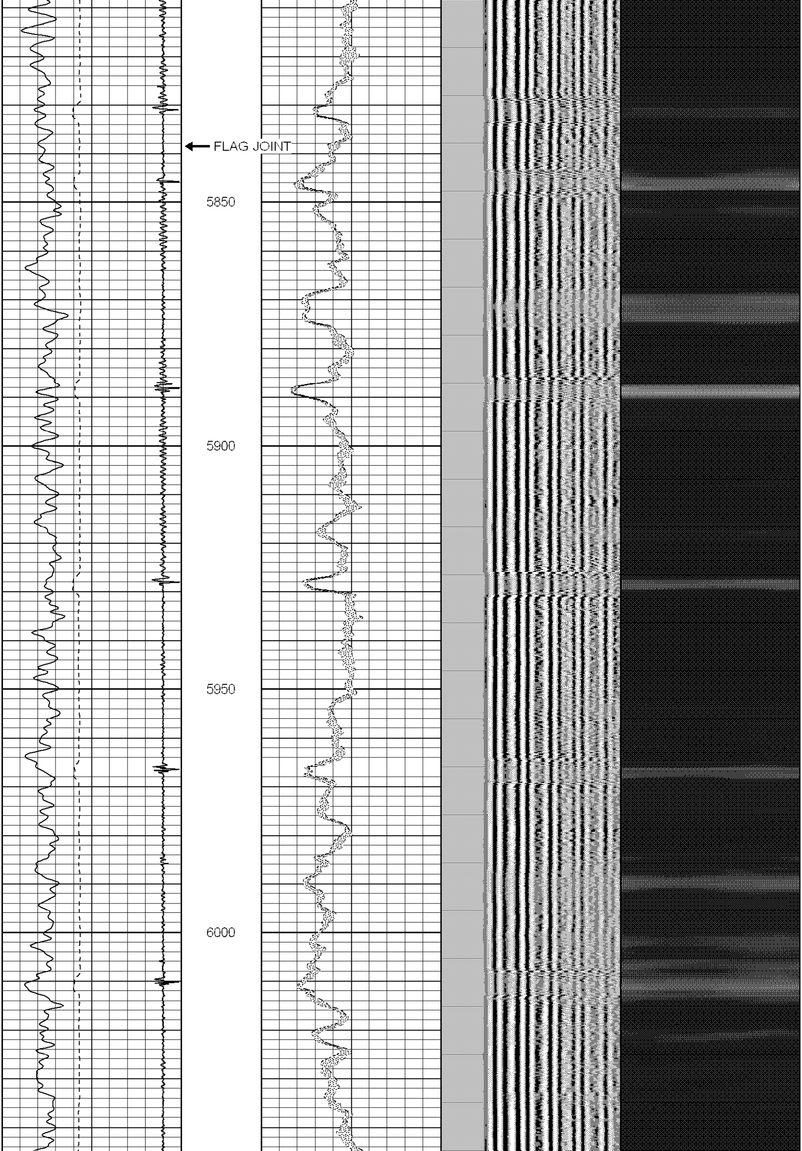
Database File:	cbl noble sauer f33-77-1hnx.db
Dataset Pathname:	pass2
Presentation Format:	sector2
Dataset Creation:	Thu May 30 11:33:41 2013 by Log SCH 120430
Charted by:	Depth in Feet scaled 1:240

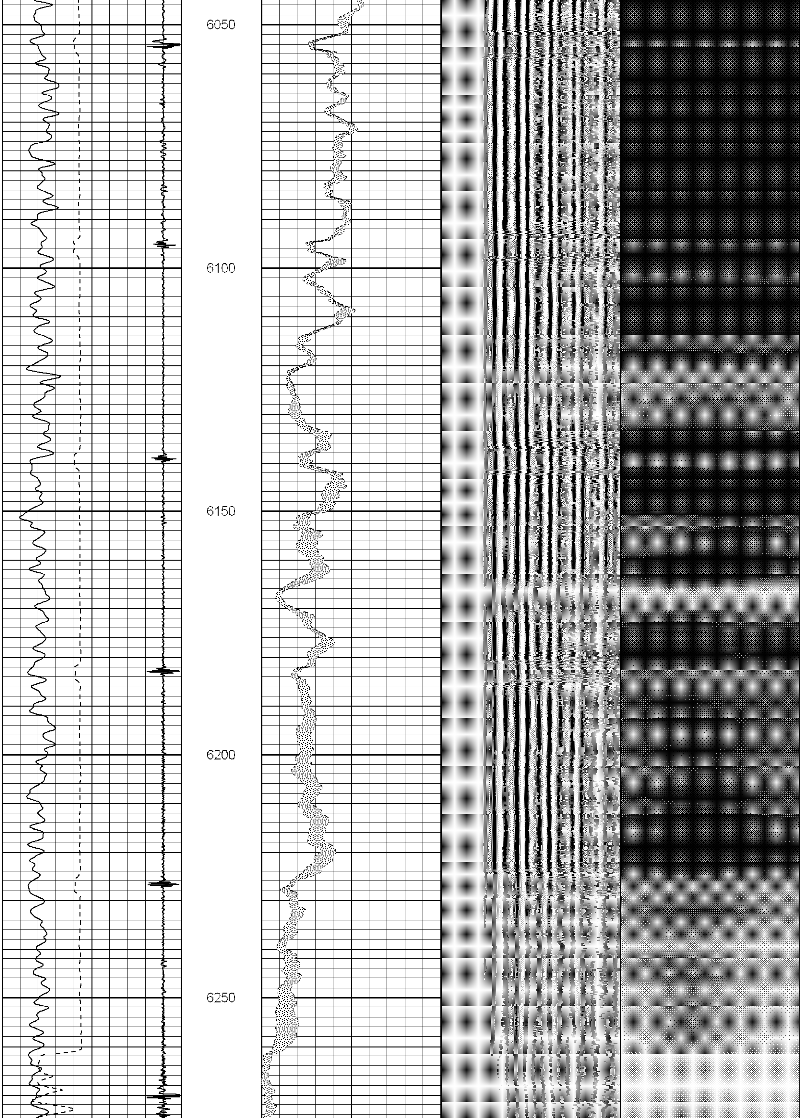


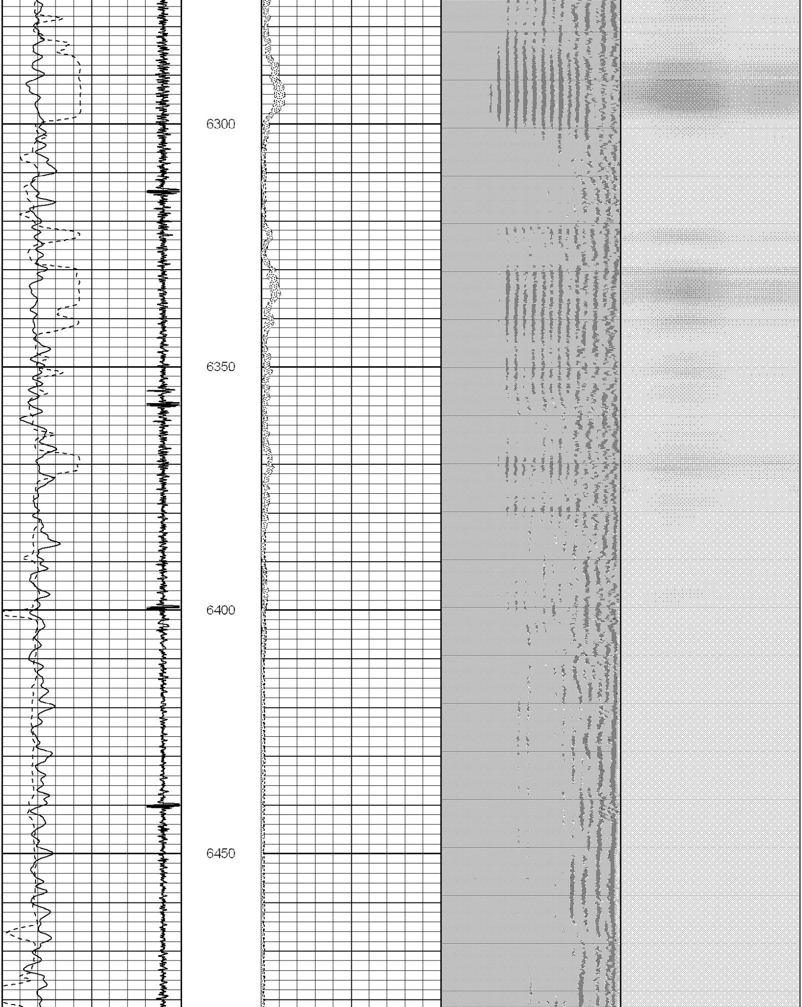


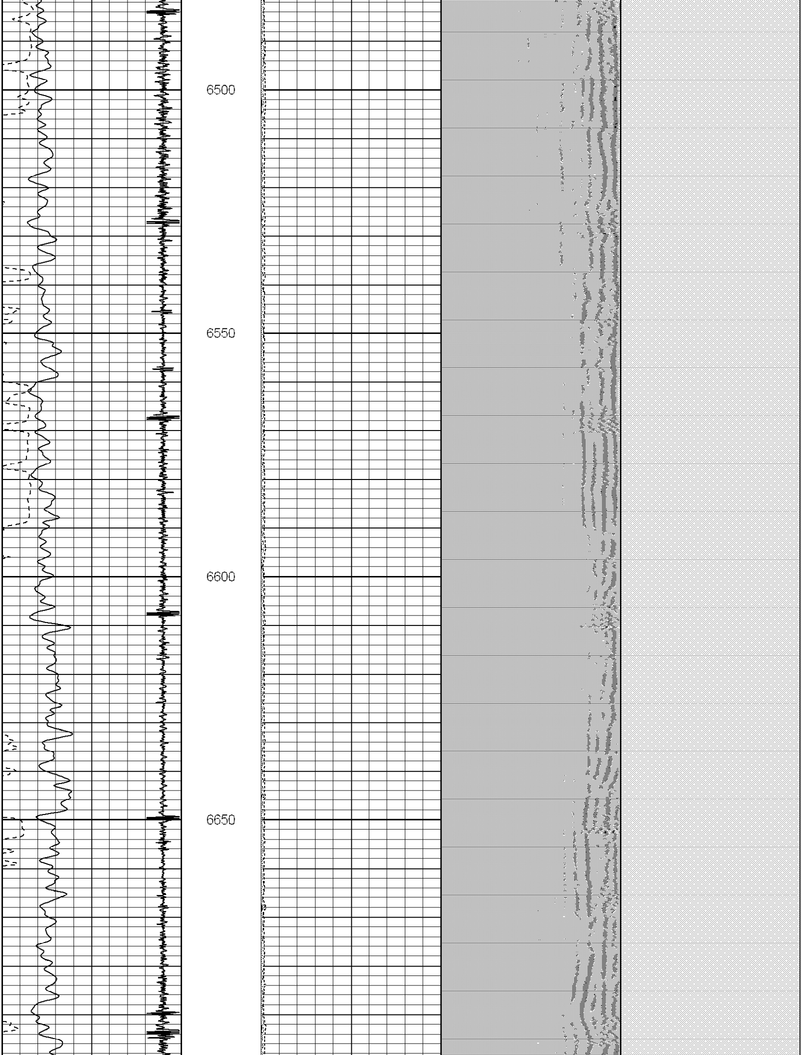


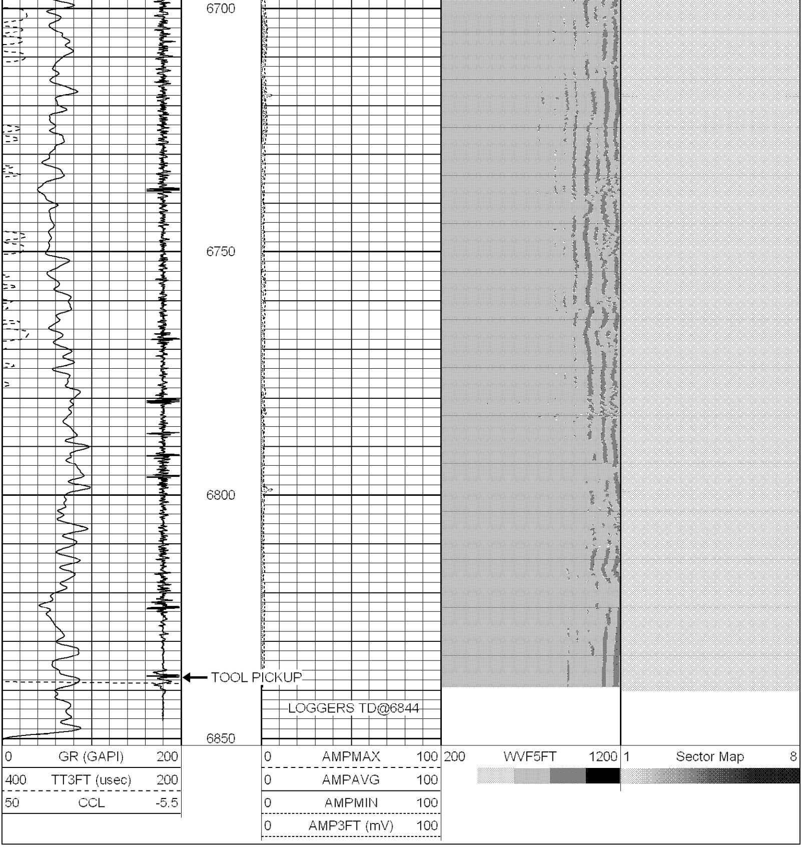












Calibration Report

Database File: cbl noble sauer f33-77-1hnx.db
Dataset Pathname: pass2
Dataset Creation: Thu May 30 11:33:41 2013 by Log SCH 120430

Gamma Ray Calibration Report

Type / Serial: Probe275dig / 110785

SHOP CALIBRATION

Mon May 13 11:26:24 2013

	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	1.0				cps
		0.4400			GAPI/cps

PRIMARY VERIFICATION

	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

BEFORE SURVEY VERIFICATION

	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

AFTER SURVEY VERIFICATION

	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

Segmented Cement Bond Log Calibration Report

Serial Number:	101020	
Tool Model:	Probe	
Calibration Casing Diameter:	7.000	in
Calibration Depth:	627.183	ft

Master Calibration, performed Thu May 30 11:18:22 2013:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.008	1.012	1.500	62.165	60.376	1.036
CAL	0.008	1.223				
5'	0.008	1.064	1.500	62.165	57.431	1.061
SUM						
S1	0.008	1.152	0.000	62.165	54.317	-0.414
S2	0.008	1.115	0.000	62.165	56.159	-0.439
S3	0.008	1.036	0.000	62.165	60.449	-0.458
S4	0.008	0.929	0.000	62.165	67.442	-0.515
S5	0.008	0.844	0.000	62.165	74.288	-0.567
S6	0.008	0.857	0.000	62.165	73.198	-0.553
S7	0.008	0.994	0.000	62.165	63.024	-0.482
S8	0.008	1.128	0.000	62.165	55.491	-0.419

Internal Reference Calibration, performed Fri Jan 13 14:30:16 2012:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.008	1.223	1.000	0.000

Air Zero Calibration, performed Thu May 30 11:18:39 2013:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.008	0.000	0.000
5'	0.008	0.000	-0.000
SUM			
S1	0.008	0.000	0.000
S2	0.008	0.000	0.000
S3	0.008	0.000	0.000
S4	0.008	0.000	-0.000
S5	0.008	0.000	0.000
S6	0.007	0.000	0.000
S7	0.008	0.000	0.000
S8	0.007	0.000	0.000