J-W WIRELINE COMPANY

SECTOR BOND GAMMA RAY COLLAR LOG

Company NOBLE ENERGY INC.
Well FURROW FEDERAL PC AB 14-65HN
Field WATENBERG
County WELD
State COLORADO

Company	NOBLE ENERGY INC.		
Well	FURROW FEDERAL PC AB 14-65HN		
Field	WATENBERG		
County	WELD	State	COLORADO
Location:	API #: 05-123-34923-00 CL: SE NE SEC. 14 TWP. 7N RGE. 64W BHL: 2640' FSL & 535' FEL	Other Services	NONE
	SEC TWP RGE		
Permanent Datum	GROUND LEVEL	Elevation	4803
Log Measured From	KELLY BUSHING	Elevation	K.B. 4820 D.F. 4820 G.L. 4803
Drilling Measured From	KELLY BUSHING		

Date	04-MARCH-2013
Run Number	ONE
Depth Driller	11341
Depth Logger	7281
Bottom Logged Interval	7280
Top Log Interval	SURFACE
Open Hole Size	8 3/4
Type Fluid	WATER
Density / Viscosity	---
Max. Recorded Temp.	215
Estimated Cement Top	914
Time Well Ready	---
Time Logger on Bottom	---
Equipment Number	2405/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	36#	SURFACE	1163
Prot. String				
Production String	4.5	11.6	7263.2	11326
Liner	7.0	23#	SURFACE	7361

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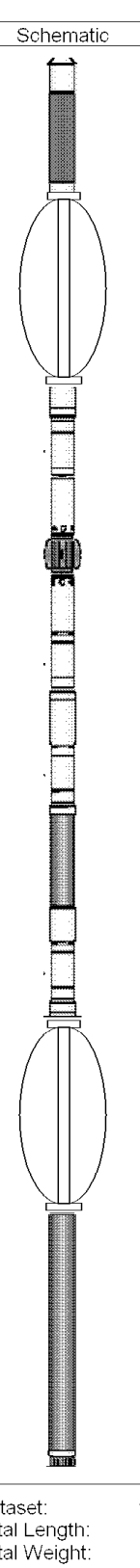
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

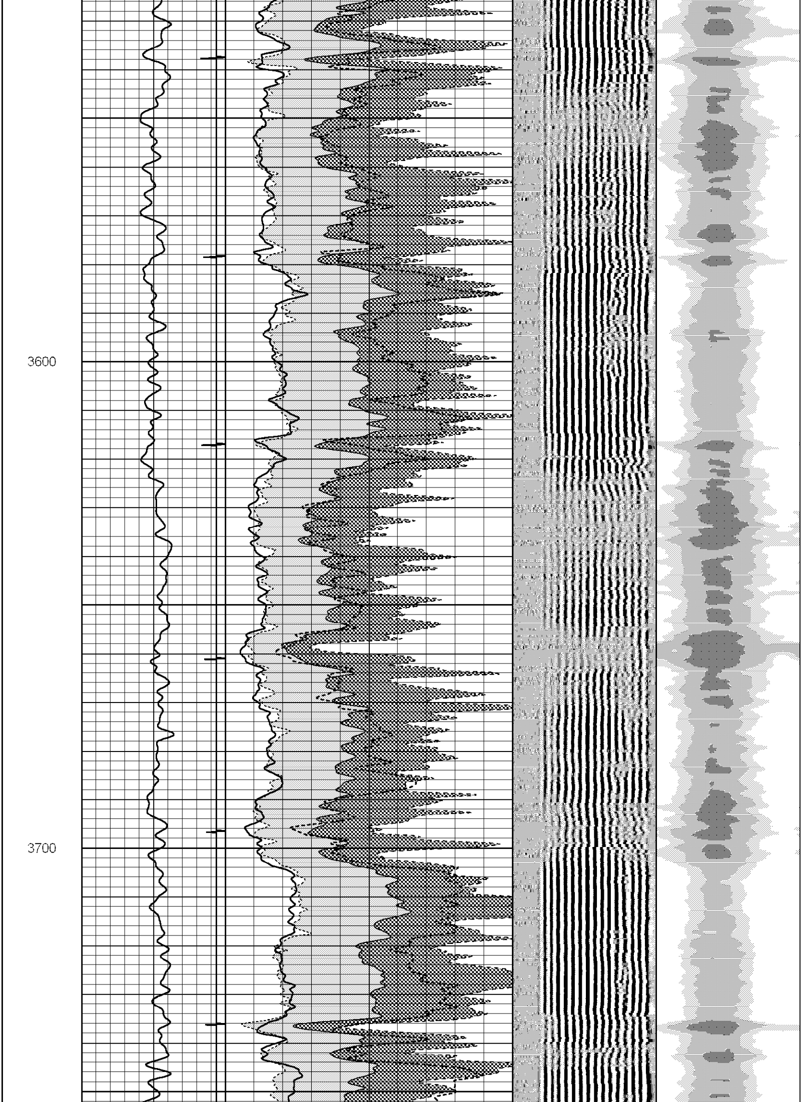


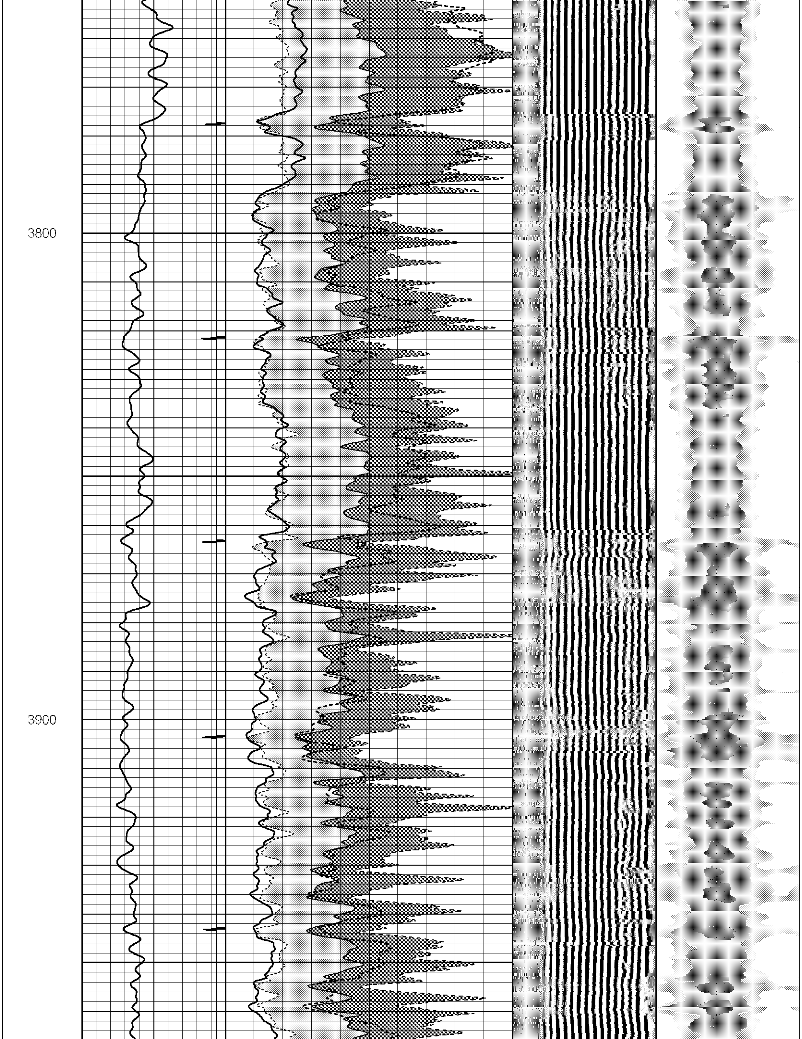
Sensor	Offset (ft)	Description	Len (ft)	OD (in)	Wt (lb)
CCL	19.57	CCL-275tekco (2.75TEKCO) 2 3/4 TEK CCL Earth Mag	1.96	2.75	20.00
		CENT-TEKCO (101)	2.73	2.75	10.00
TEMP	12.78				
WVFS1	11.49				
WVFS2	11.49	275CTEKSECWTWSLCANS-275RIB (1239.13 2 3/4" (R.I.B.) TOOL 3FT, 5FT and 8EA RIB SIGNALS 400 DEG "F" @20K PSI With Sliding Cans For Pressure Ballance		2.75	102.00
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				

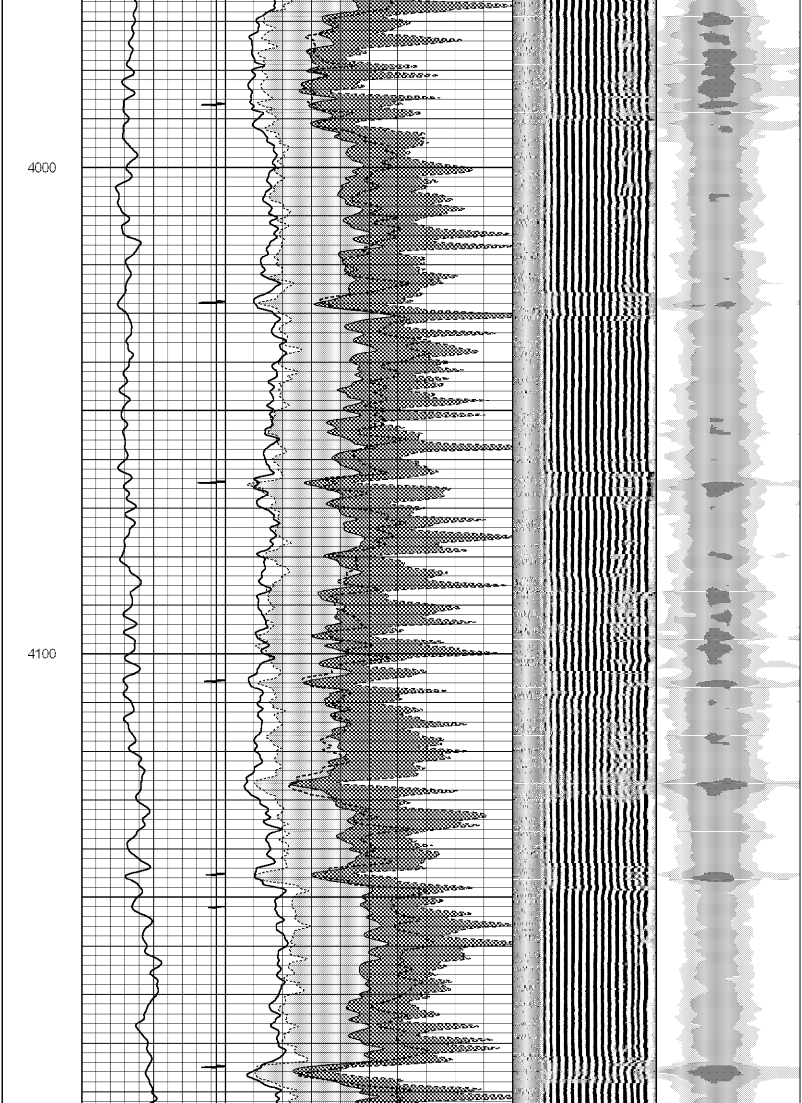
Dataset: furrow federal pc ab 14-65hn.db: field/well/run1/pass2
Total Length: 20.22 ft
Total Weight: 172.00 lb
O.D. 2.75 in

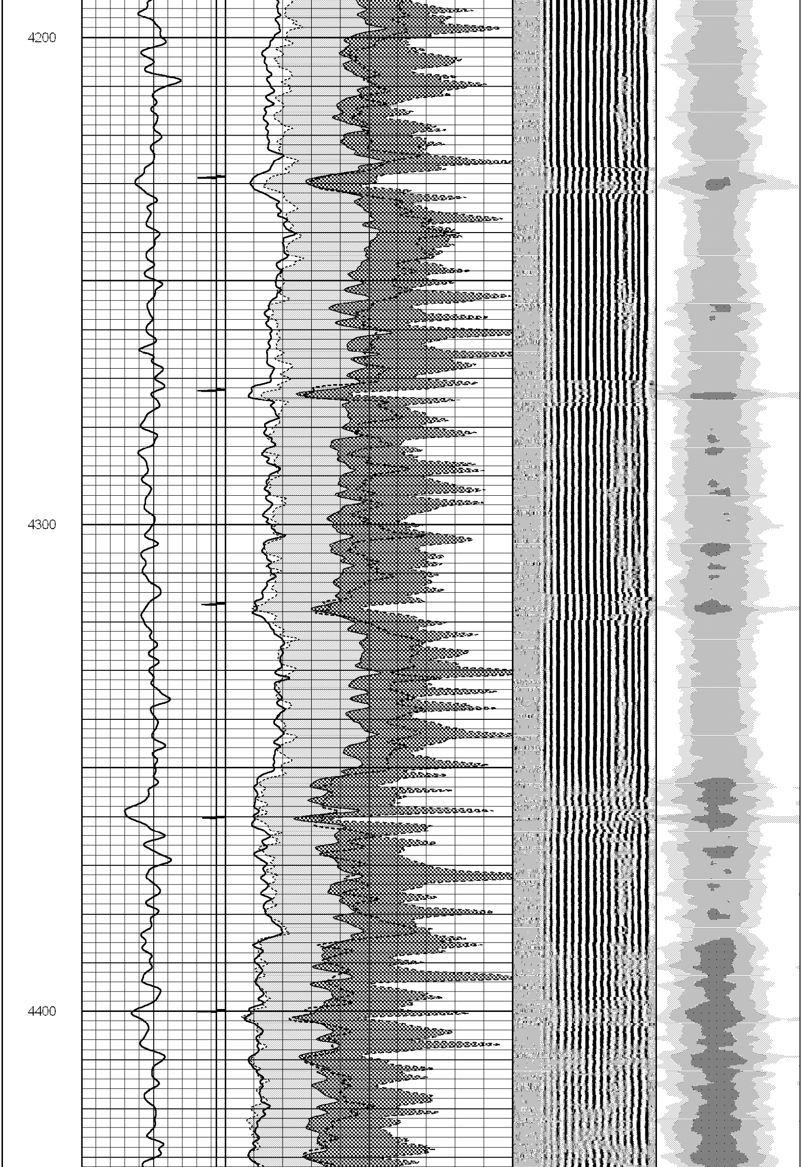
Database File: furrow federal pc ab 14-65hn.db
Dataset Pathname: pass2
Presentation Format: scbl01
Dataset Creation: Mon Mar 04 20:38:14 2013 by Log SCH 111116
Charted by: Depth in Feet scaled 1:240

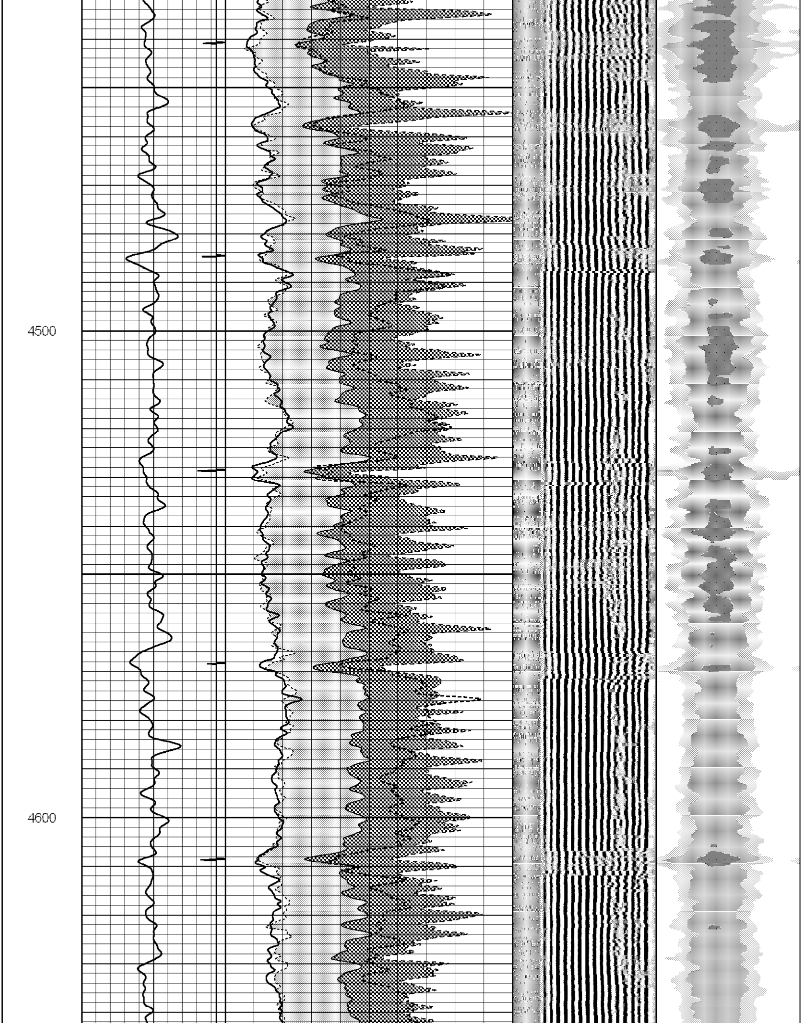
-15 CCL 1	0 Sector Average 150	200 VDL 1200	1 VAD 8
0 GR (GAPI) 180	0 Sector Maximum 150		
	0 Sector Minimum 150		
	0 Amplified Amplitude (mV) 30		
	0 Amplitude (mV) 100		

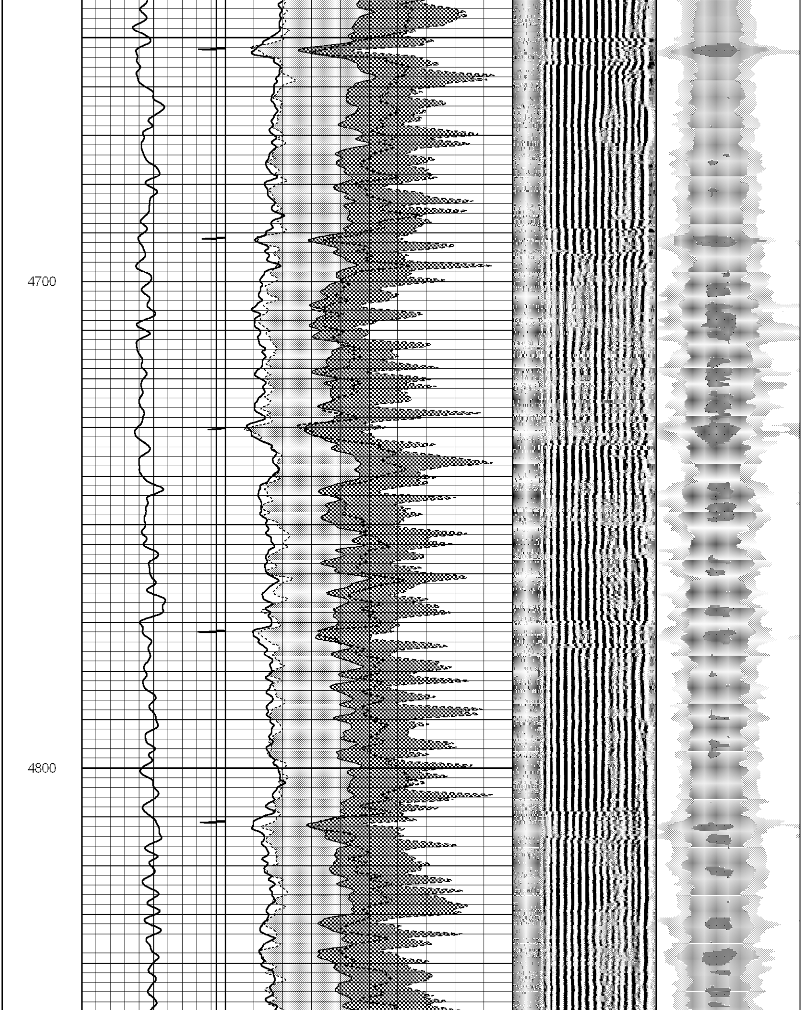


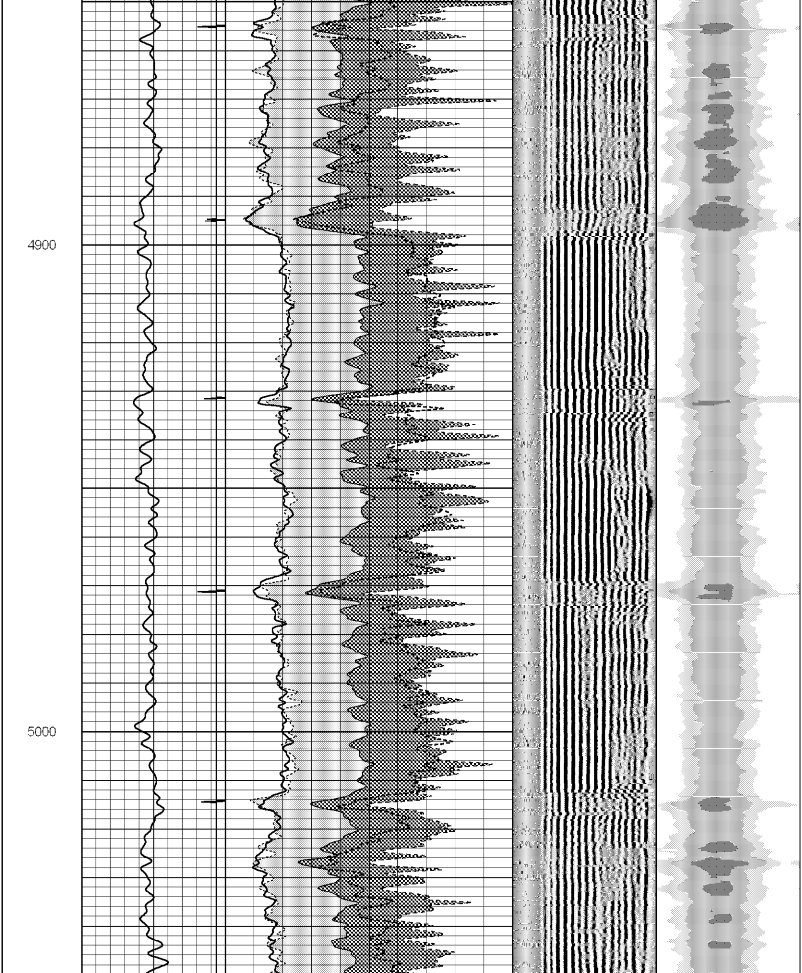


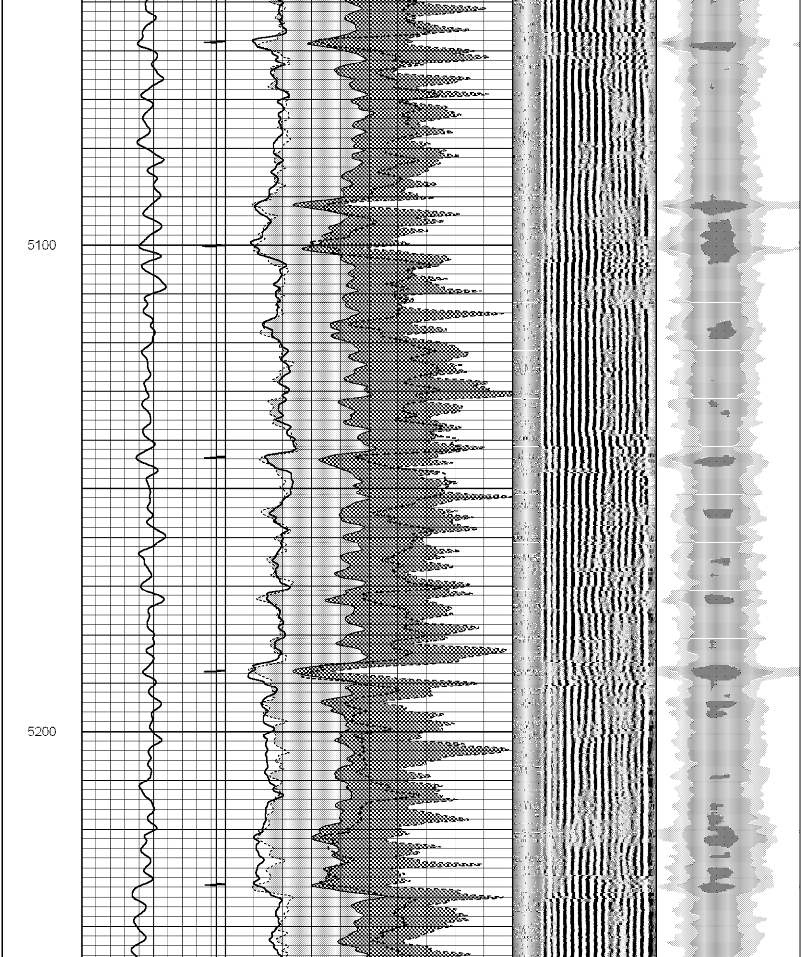


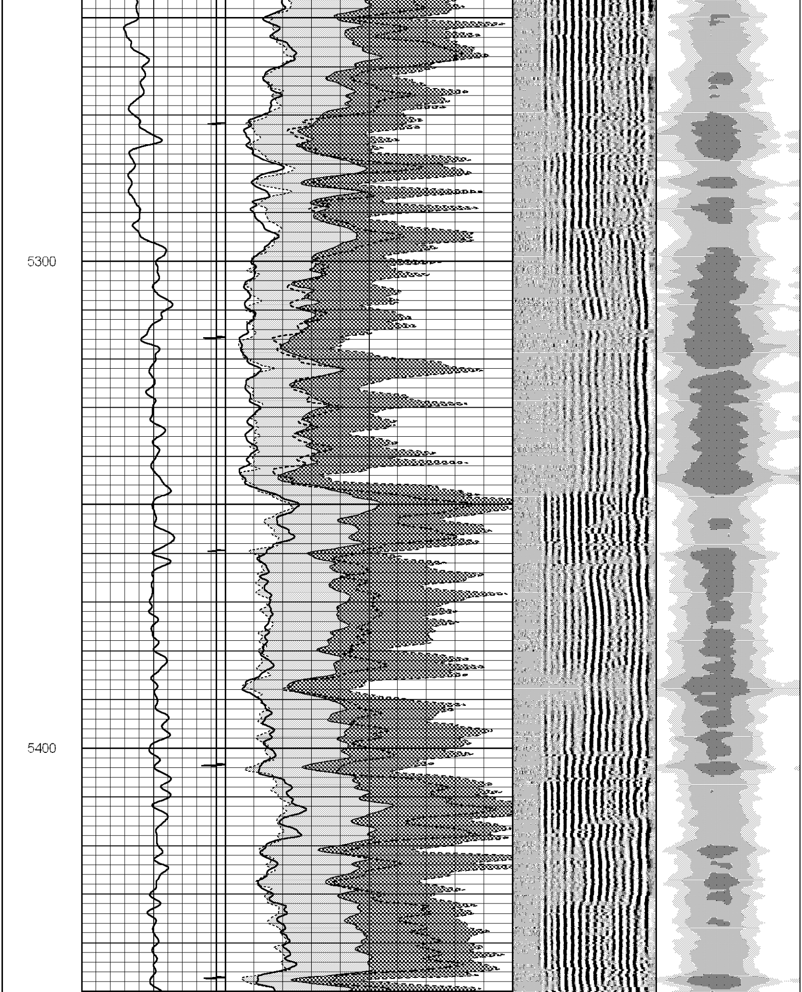


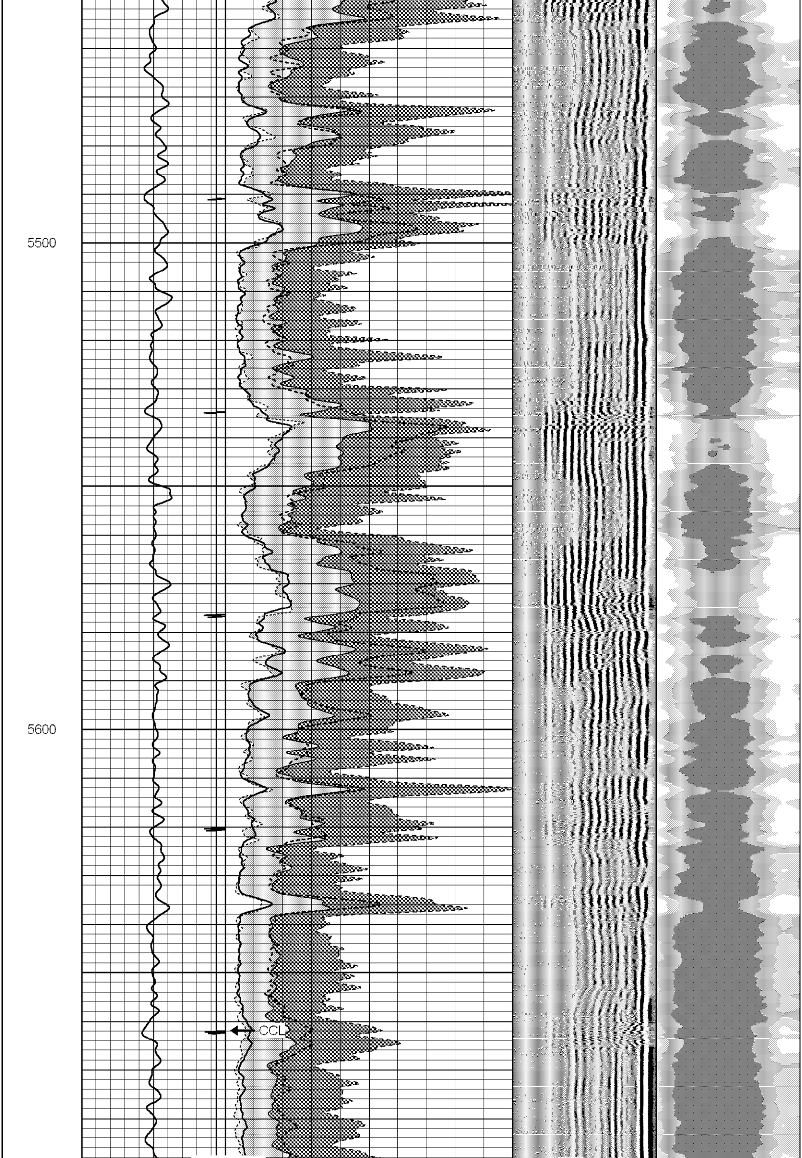


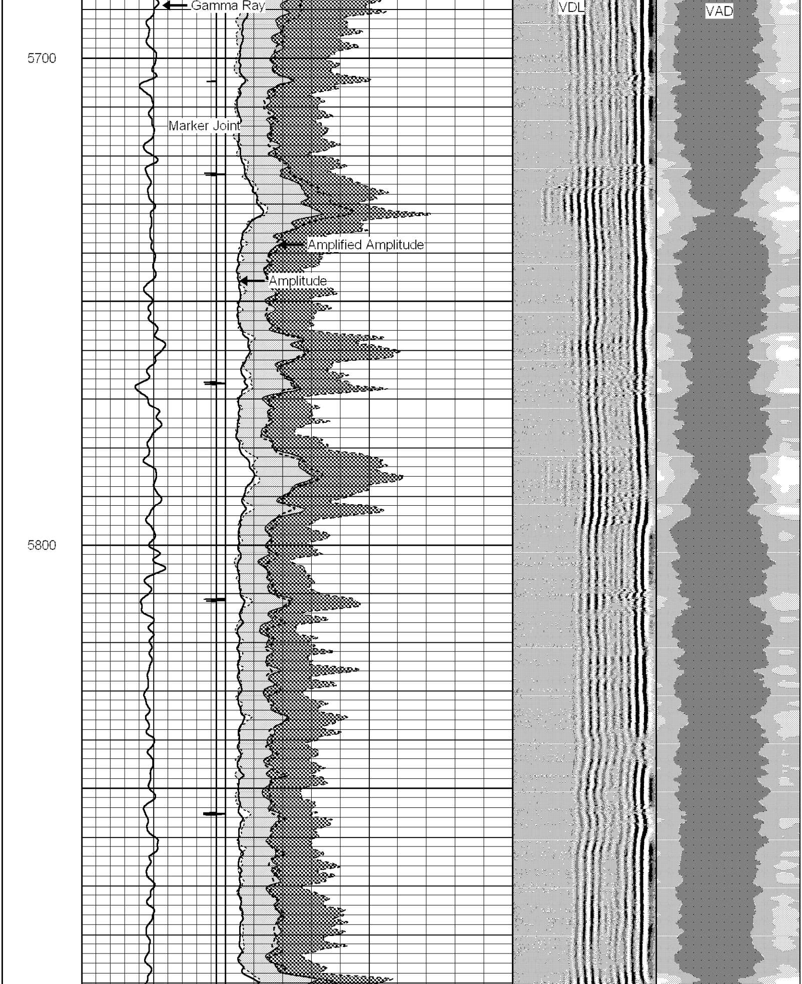


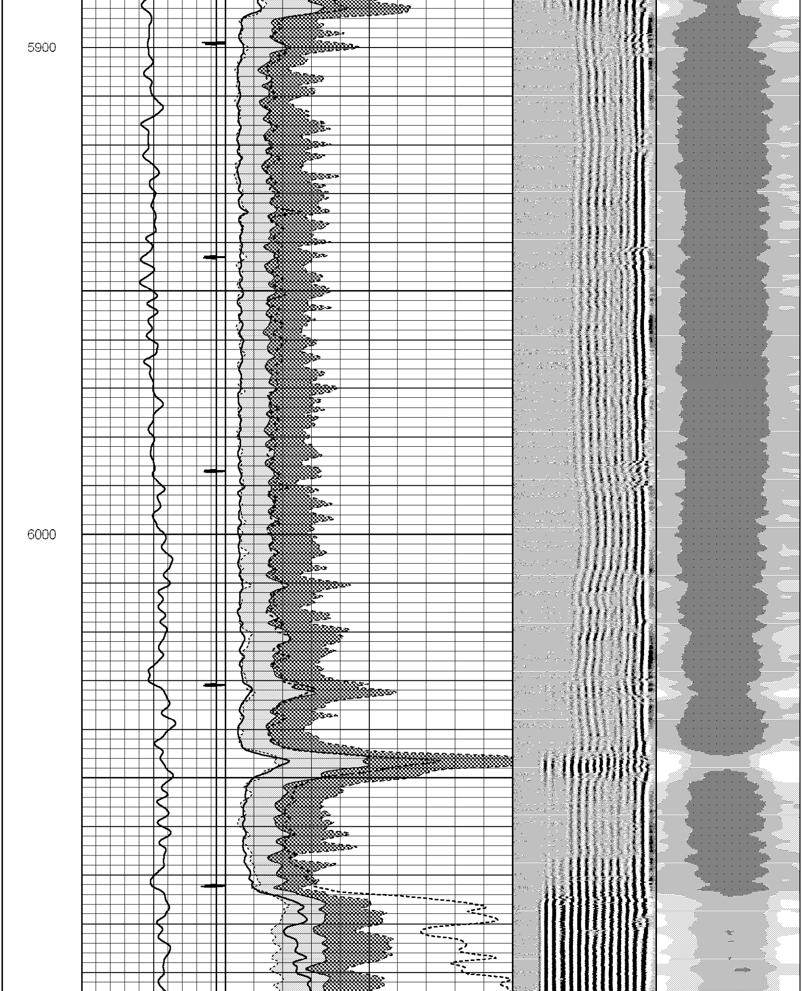


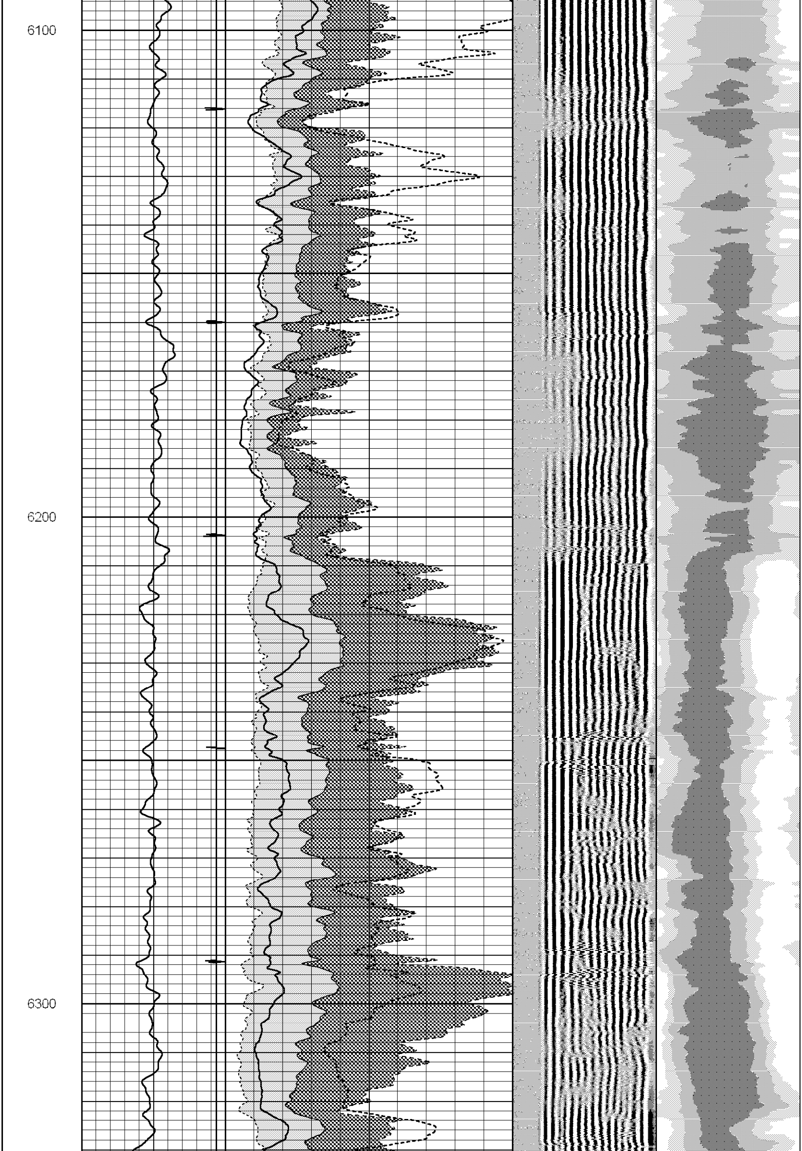


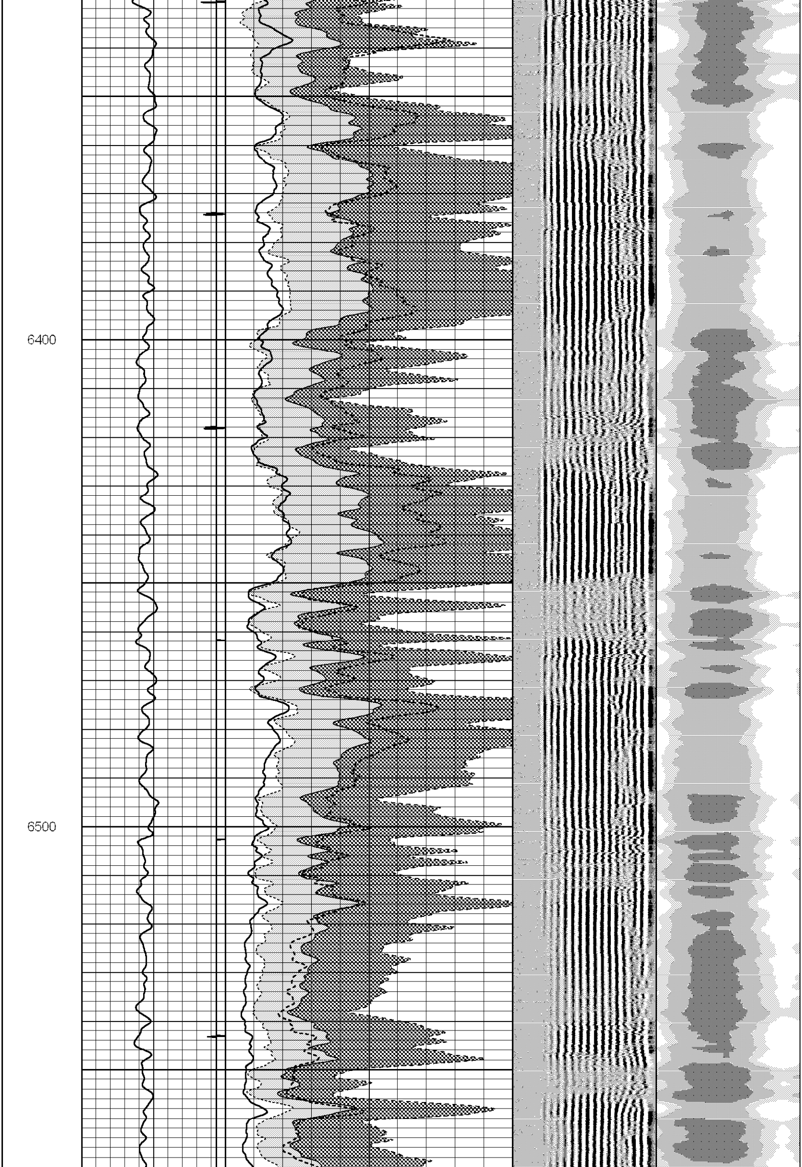


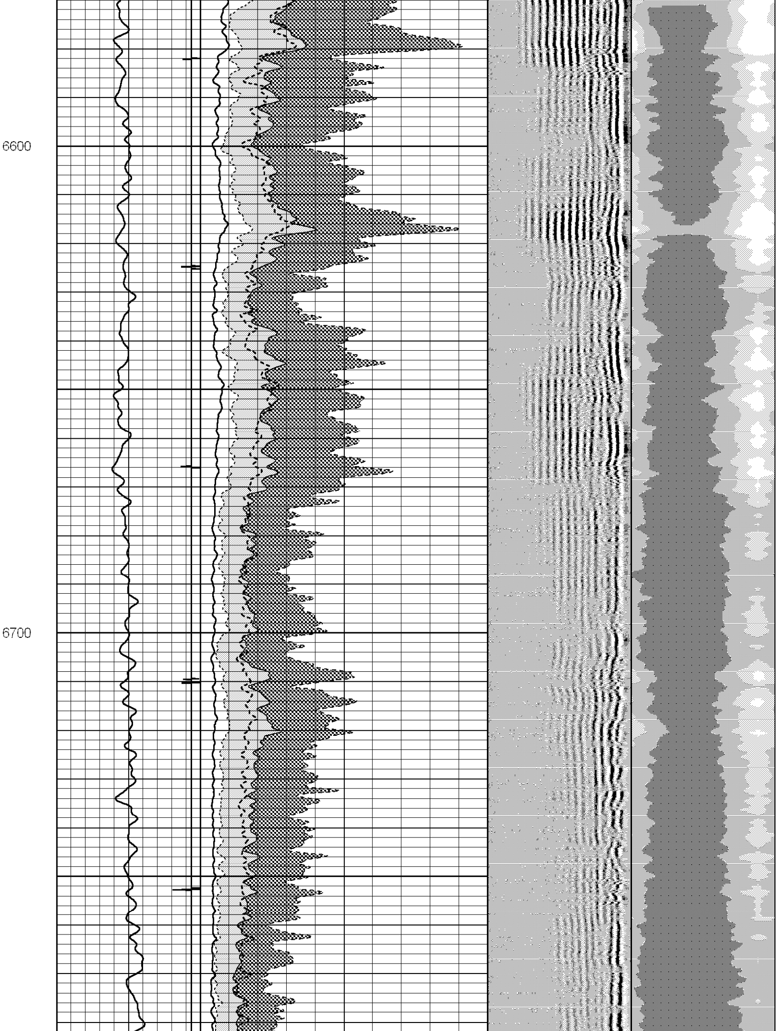


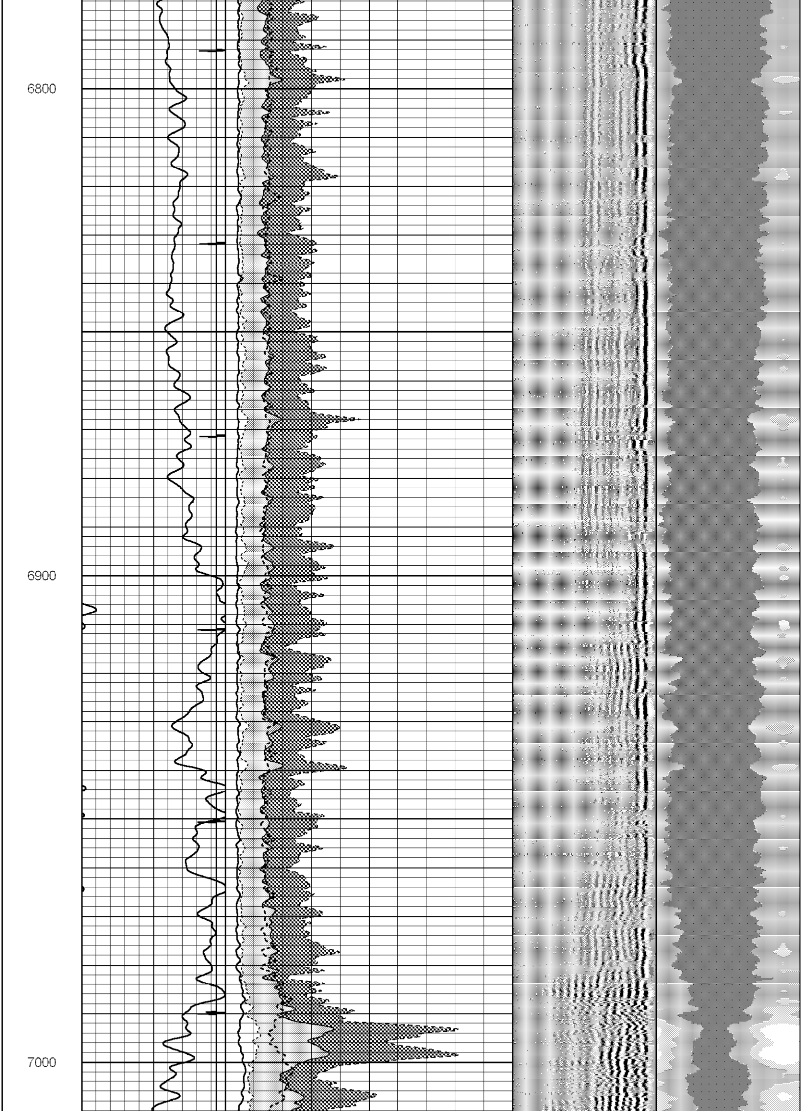


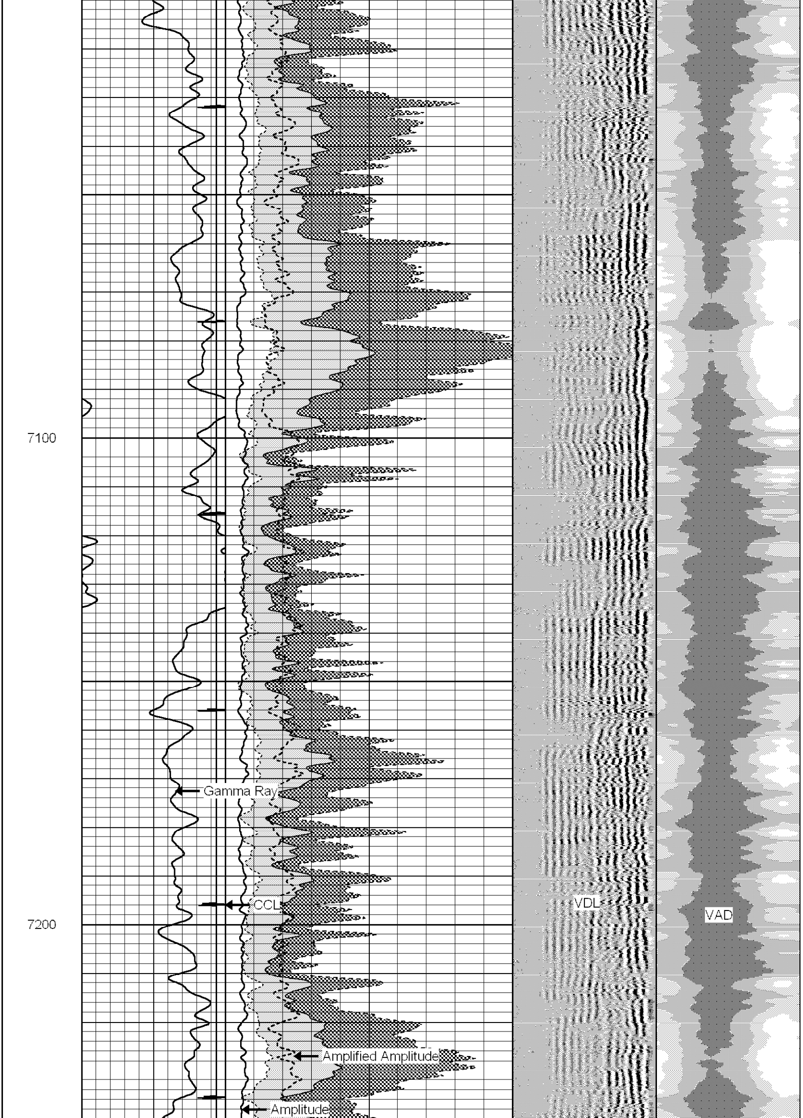


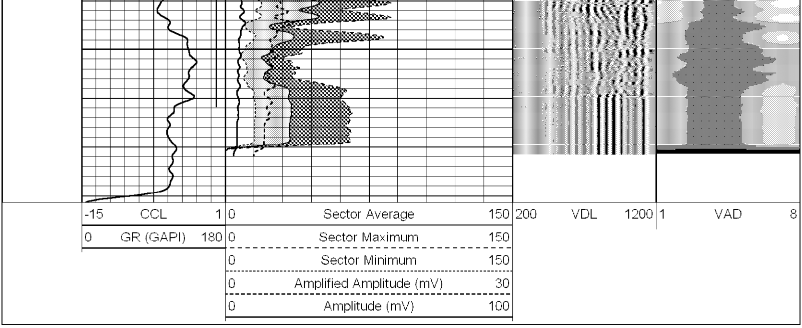












Calibration Report

Database File:	furrow federal pc ab 14-65hn.db
Dataset Pathname:	pass2
Dataset Creation:	Mon Mar 04 20:38:14 2013 by Log SCH 111116

Gamma Ray Calibration Report

Serial Number:	101sgr	
Tool Model:	TEKCO	
Performed:	Sun Jun 13 14:33:21 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:	938.392	ft

Master Calibration, performed Mon Mar 04 20:19:07 2013:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	2.500	3.000	62.165	23.666	3.000
CAL	0.000	0.193				
5'	0.000	2.500	3.000	62.165	23.666	3.000
SUM						
S1	0.000	0.392	0.000	100.000	255.210	0.000
S2	0.000	0.642	0.000	100.000	155.741	0.000
S3	0.000	1.098	0.000	100.000	91.038	0.000
S4	0.000	1.461	0.000	100.000	68.447	0.000
S5	0.000	1.499	0.000	100.000	66.731	0.000
S6	0.000	0.902	0.000	100.000	110.806	0.000
S7	0.000	0.484	0.000	100.000	206.790	0.000
S8	0.000	0.315	0.000	100.000	317.840	0.000

Internal Reference Calibration, performed Wed Dec 31 18:00:00 1969:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.000	0.193	1.000	0.000

Air Zero Calibration, performed Mon Sep 11 13:40:00 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: Mon Mar 04 20:12:36 2013

	Reference	Reading
Low Reference:	300.00 degF	50.00 usec
High Reference:	400.00 degF	300.00 usec

Gain: 0.40
Offset: 280.00
Delta Spacing 1