Company OXY USA WTP LP
Well SHELL 697-34-16A
Field GRAND VALLEY
County GARFIELD State CO

HALLIBURTON

ACOUSTIC CEMENT BOND / TEMPERATURE LOG

Company OXY USA WTP LP
Well SHELL 697-34-16A
Field GRAND VALLEY
County GARFIELD State CO

API No.: 05045178790000 Serv #: 7022299
Location: SURFACE HOLE: 1227' FNL & 1502' FEL
Other Services KUTH RMTE HFWS
Sec: 03 Twp: 07S Rge: 97W

Elevation K.B. 6345' D.F. 6344' G.L. 6327'

Permanent Datum GROUND LEVEL Elevation 6327'
Log Measured From K.B. 18 Ft. above perm. datum
Drilling Measured From K.B.

Date @ Time Logged	01 DEC 2009 @ 11:15	Type Fluid in Hole	WATER
Run No.	ONE	Density of Fluid	8.34 PPG
Depth - Driller	7421'	Fluid Level	FULL
Depth - Logger	7314'	Cement Top Est. Logged	LOGGED
Bottom - Logged Interval	7310'	Equipment / Location	10971659 / GJ
Top - Log Interval	SURFACE	Recorded by	J.ARRASCUE
Max. Recorded Temp.	222 DGF	Witnessed by	R. STEVENS

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 Volume	/	/	/	/
Cement Type / Weight	/	/	/	/
Formulation				
Mud Type / Mud Wgt.	/	/	/	/

	Borehole Record			Casing & Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
ONE	24"	SURFACE	78'	N/A	N/A	SURFACE	N/A
TWO	12.25"	78'	1239'	9.625"	36#	SURFACE	1201'
THREE	7.875"	1239'	7421'	4.5"	11.6#	SURFACE	7405'

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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

H.E.S. CBL LOG / TEMPERATURE LOG DATED 01 DEC 2009 IS CORRELATED TO H.E.S. RMT LOG DATED 22 NOV 2009

MAIN CBL LOG RAN WITH 1500 PSI

LOGGED INTERVALS PER CUSTOMER REQUEST

SHORT JOINTS LOCATED @ 4598' - 4604' & 5656' - 5660'

THANK YOU FOR USING HALLIBURTON ENERGY SERVICES GRAND JUNCTION, CO

Service Ticket No. 7022299 API No. 05045178790000 PGM Ver 081210

The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client

EQUIPMENT DATA

GAMMA RAY		COLLAR LOCATOR		BOND LOG		TEMPERATURE TOOL	
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	081008	Serial No.	081008	Serial No.	070571	Serial No.	081013
Model No.	GR-PROBE	Model No.	CCL-PROBE	Model No.	CBL-PROBE	Model No.	1.375 TEMP
Diameter	2.75"	Diameter	2.75"	Diameter	2.75"	Diameter	1.38"

LOGGING DATA

General Data

Pass No.	Depths From	Depths To	Well Head Pressure	Speed Ft/Min	Logging Run Comments
ONE	2000'	7314'	0	65	TEMPERATURE LOG SECTION
TWO	7314'	SURFACE	1500 PSI	65	MAIN LOG SECTION

	GR		CCL		AMP		TEMP	
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ONE	0	200	-9	1	N/A	N/A	10	350
TWO	0	200	-9	1	0	100	N/A	N/A

DIRECTIONAL INFORMATION

Maximum Deviation	N/A	deg. @	N/A	KOP	N/A

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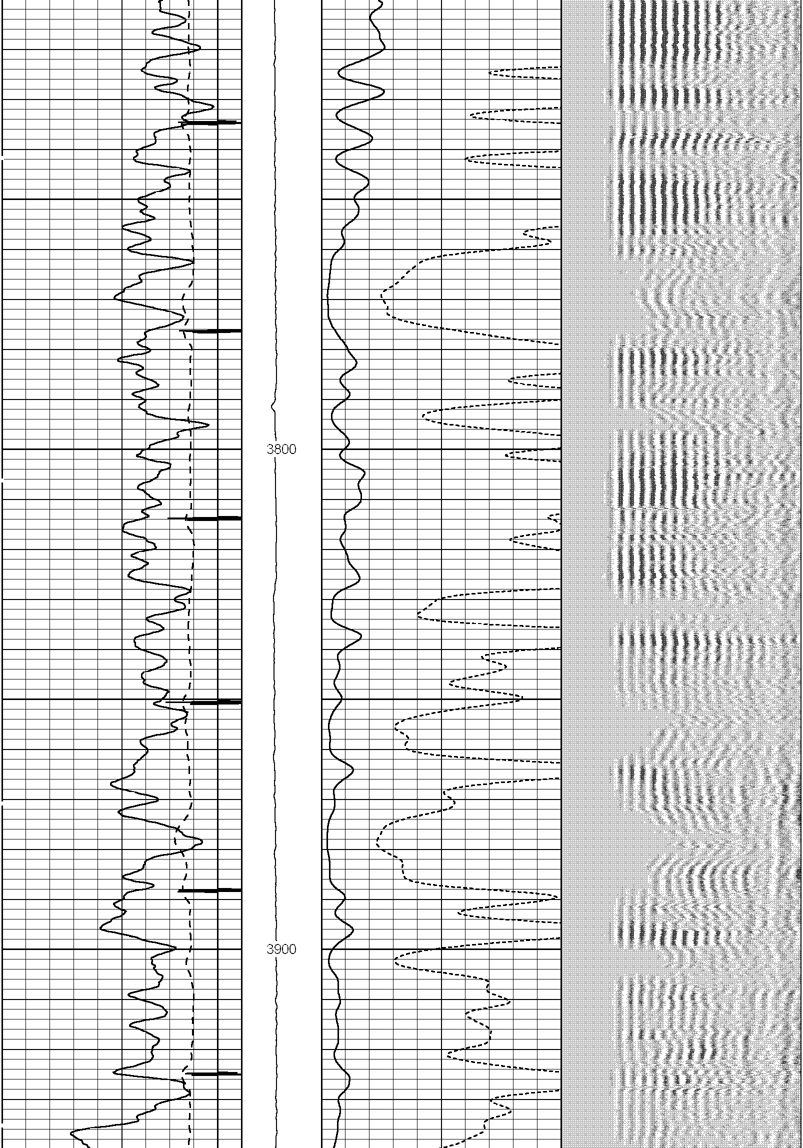
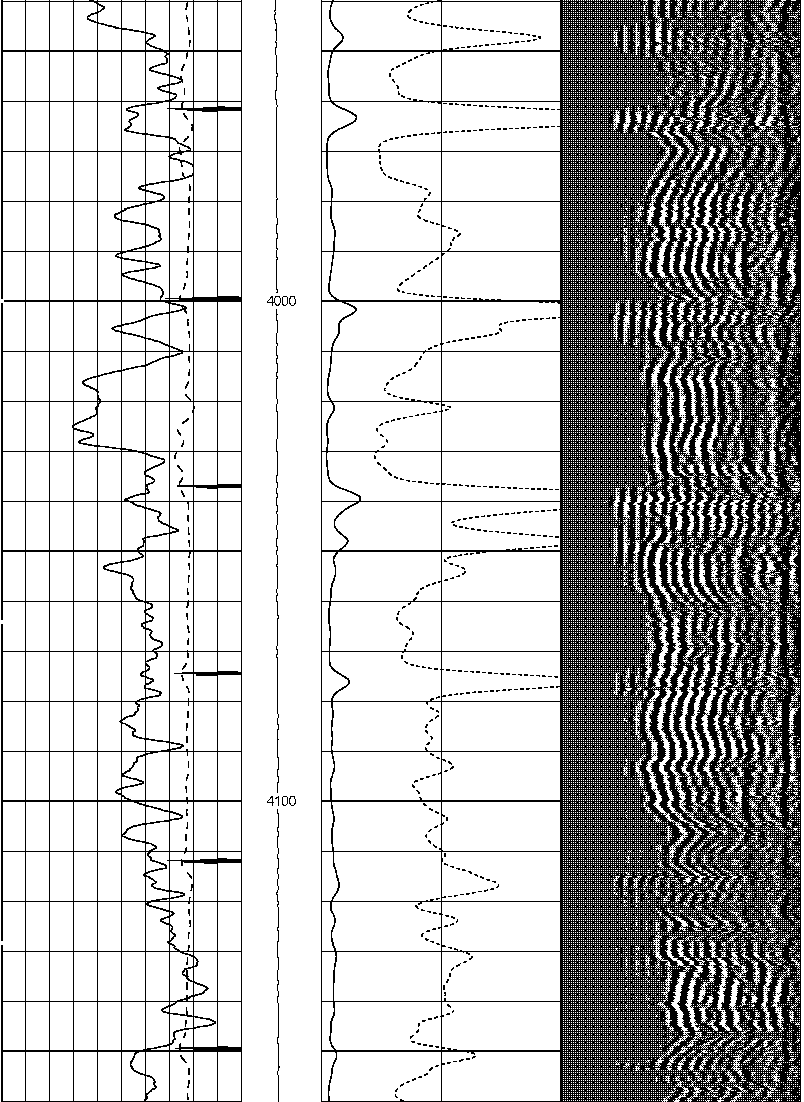
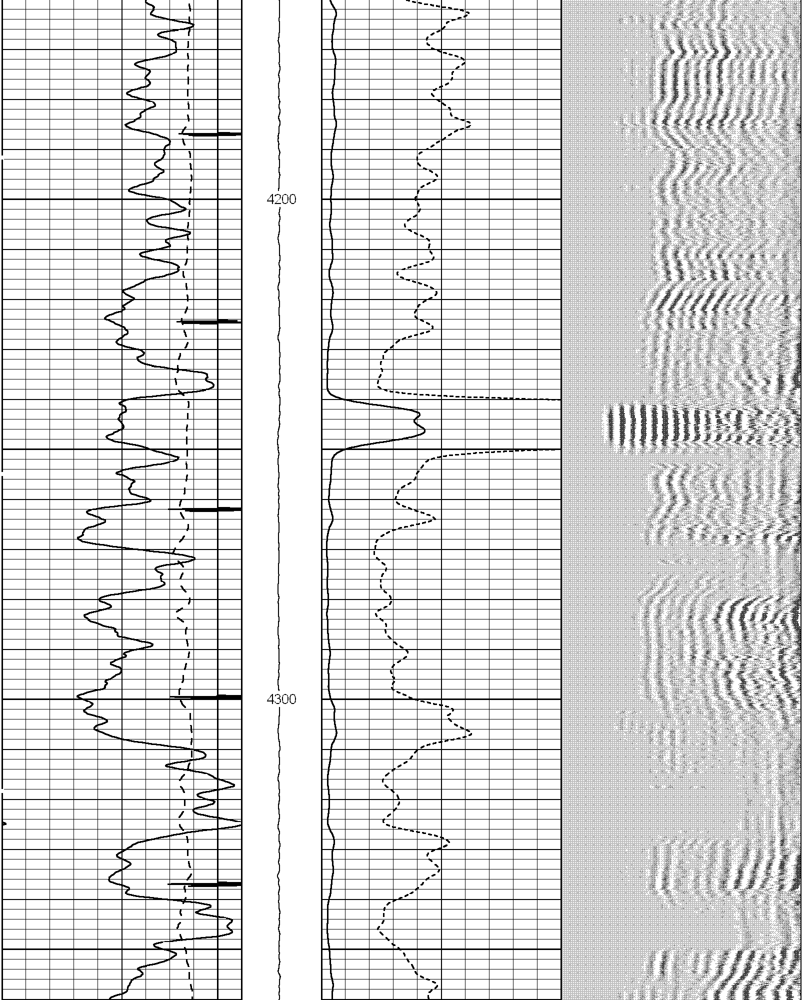
ACOUSTIC CEMENT BOND LOG

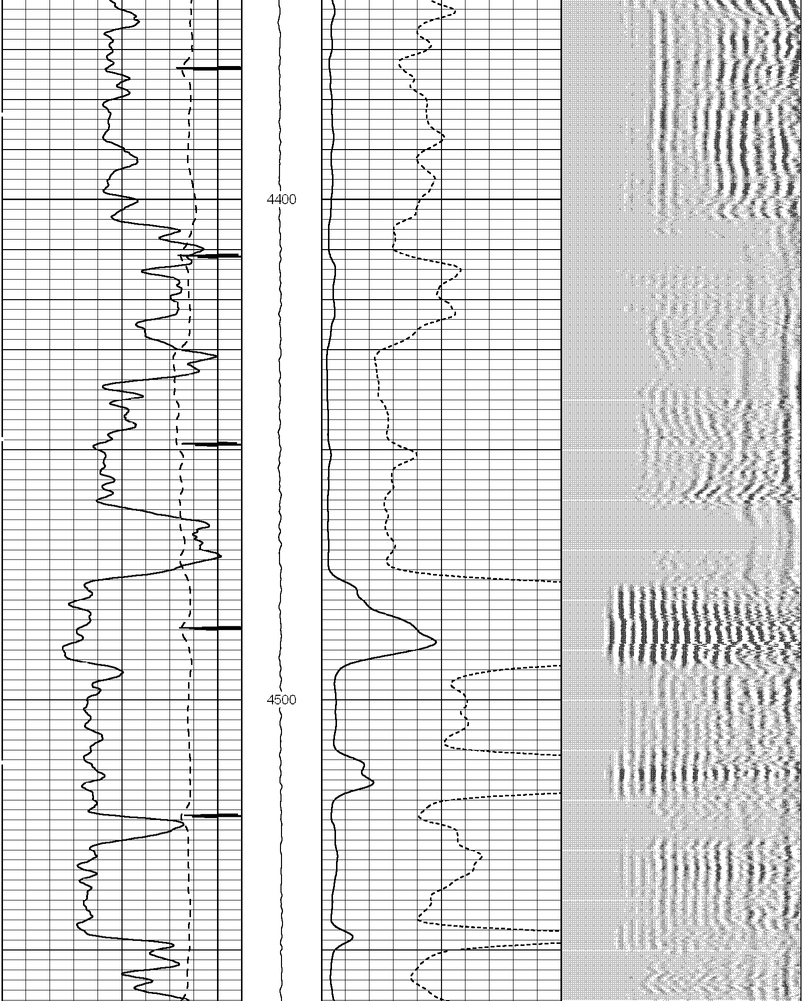
MAIN LOG SECTION - PRESSURE 1500 PSI
5"=100'

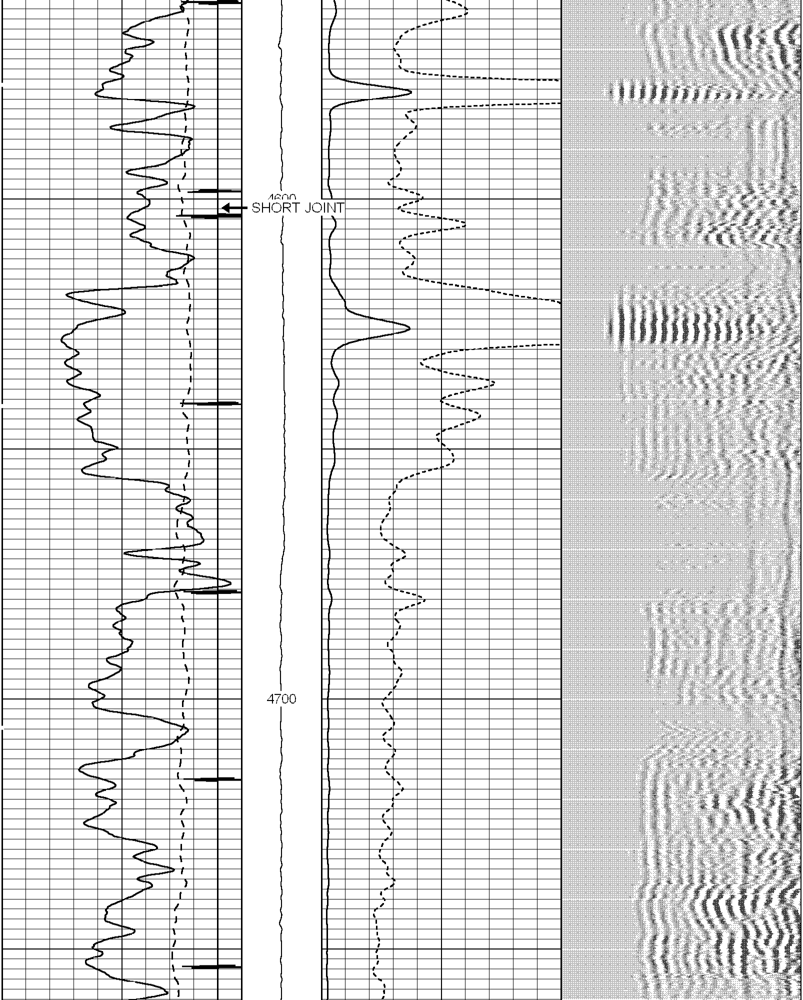
Database File: c:\warrior\data\oxy\oxy_shell_cbl_temp\shell_697_34_16a_cbl.db
Dataset Pathname: G_VALLEY/SHELL_697/run1/MAIN_CB2
Presentation Format: cbl_main
Dataset Creation: Wed Dec 02 16:14:57 2009
Charted by: Depth in Feet scaled 1:240

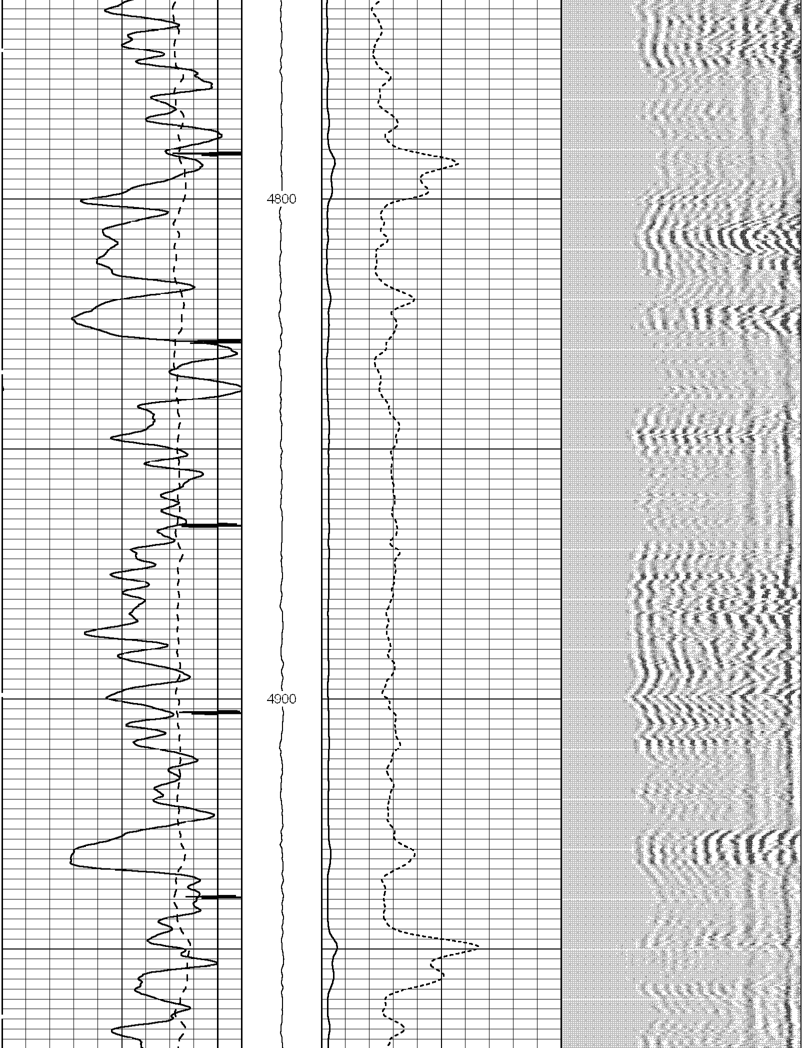


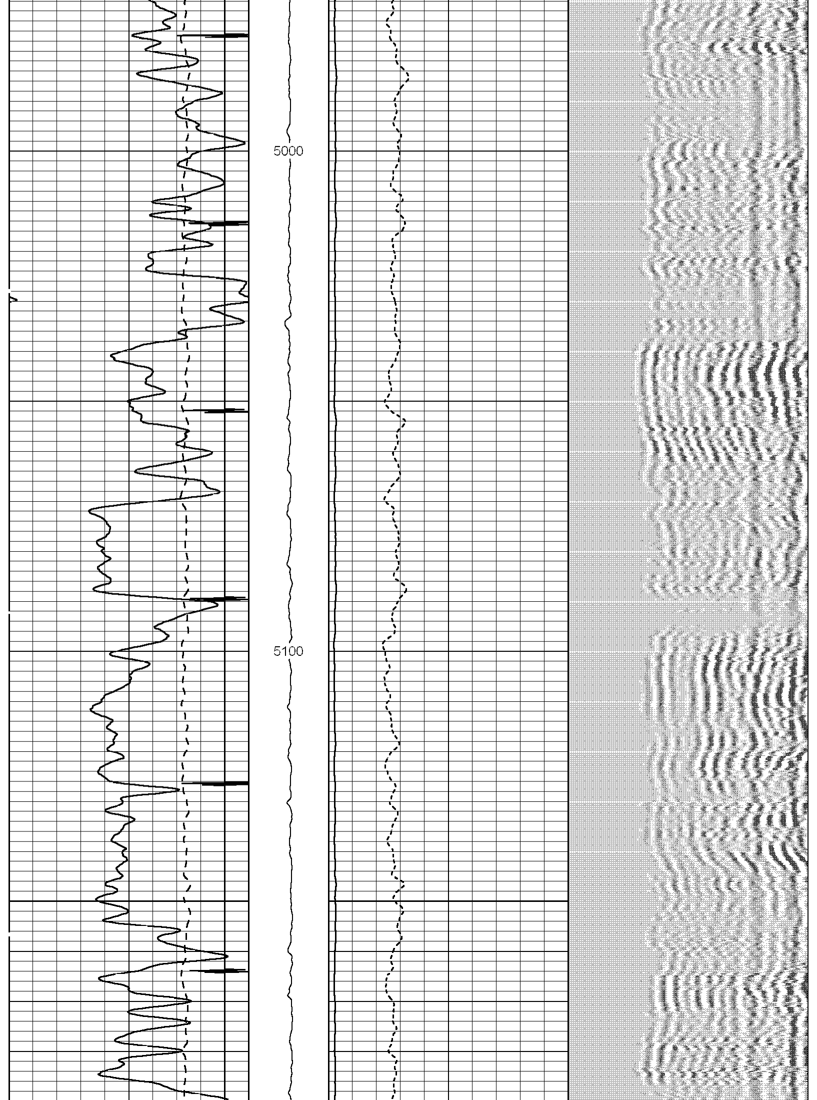


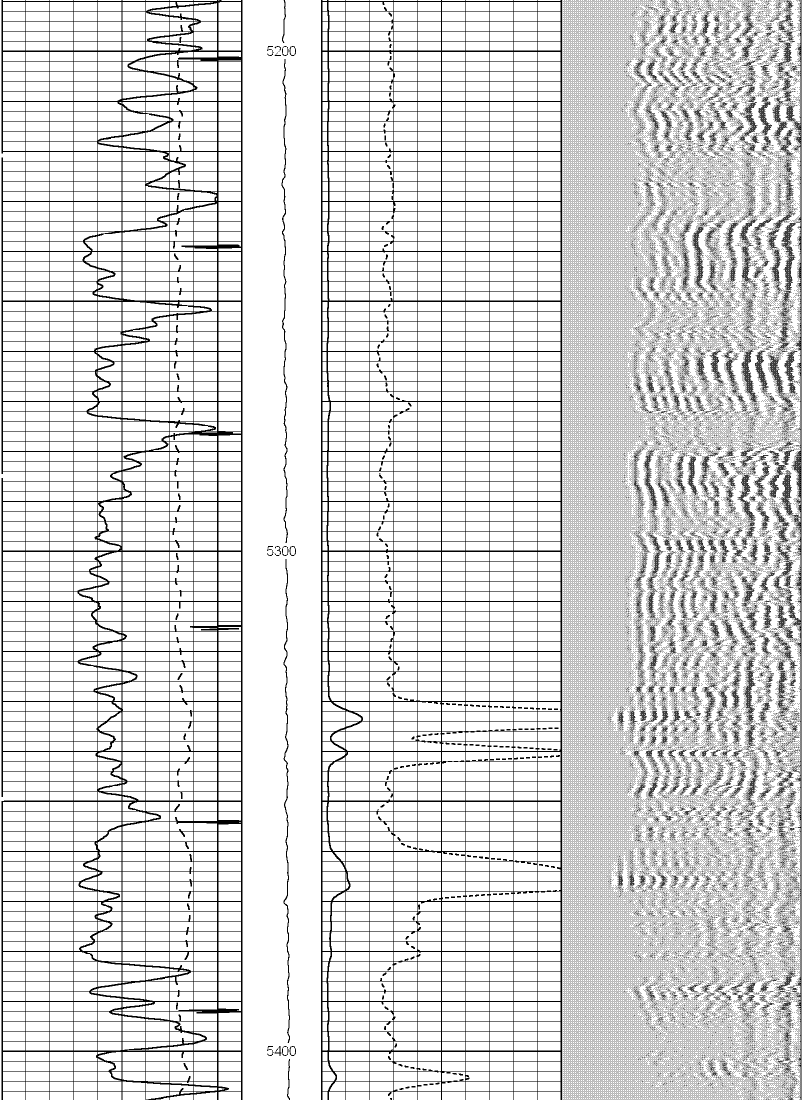


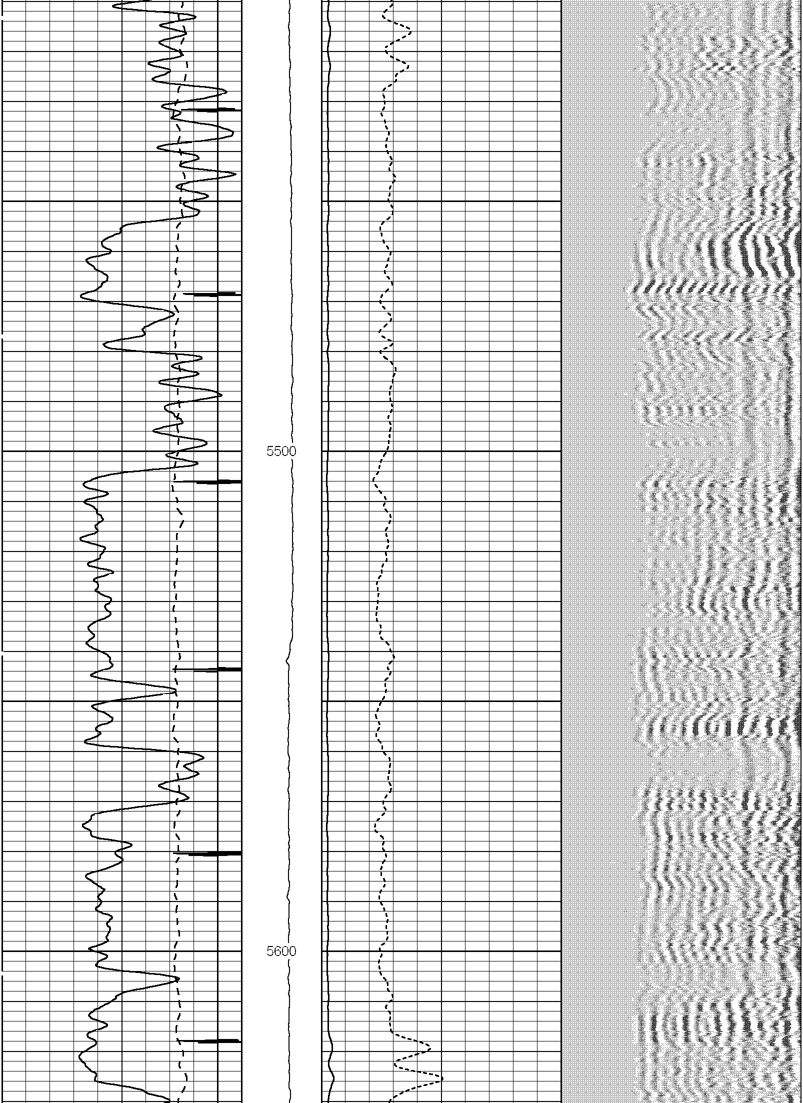


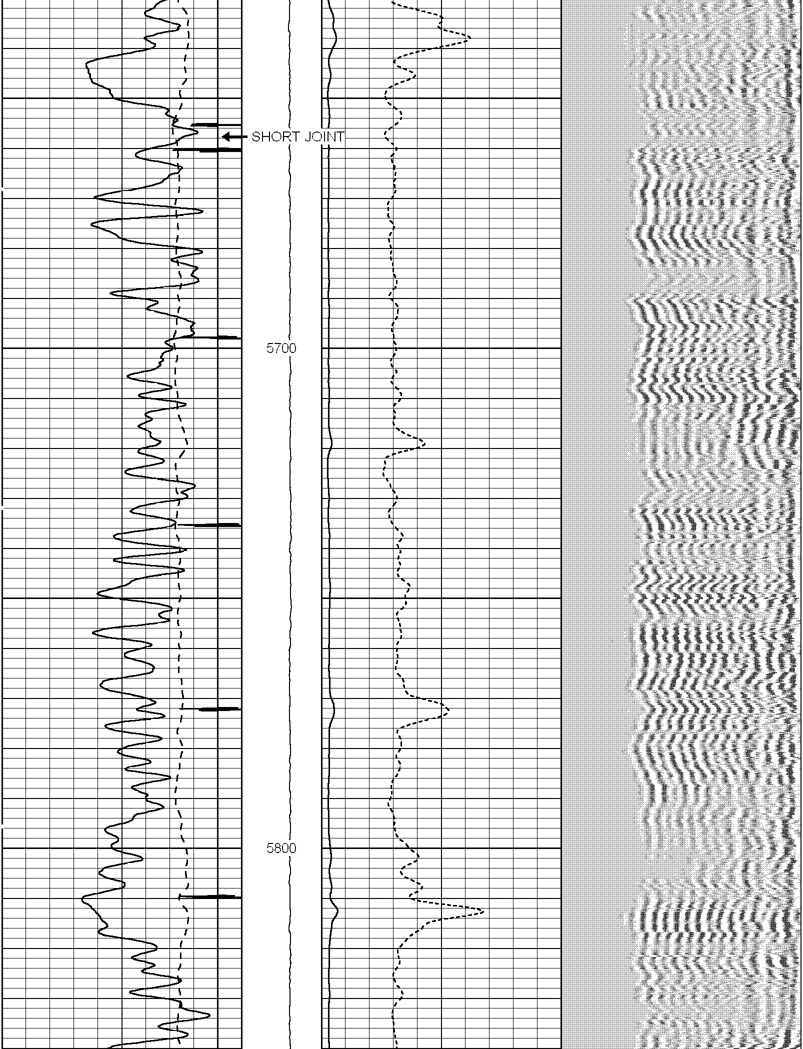


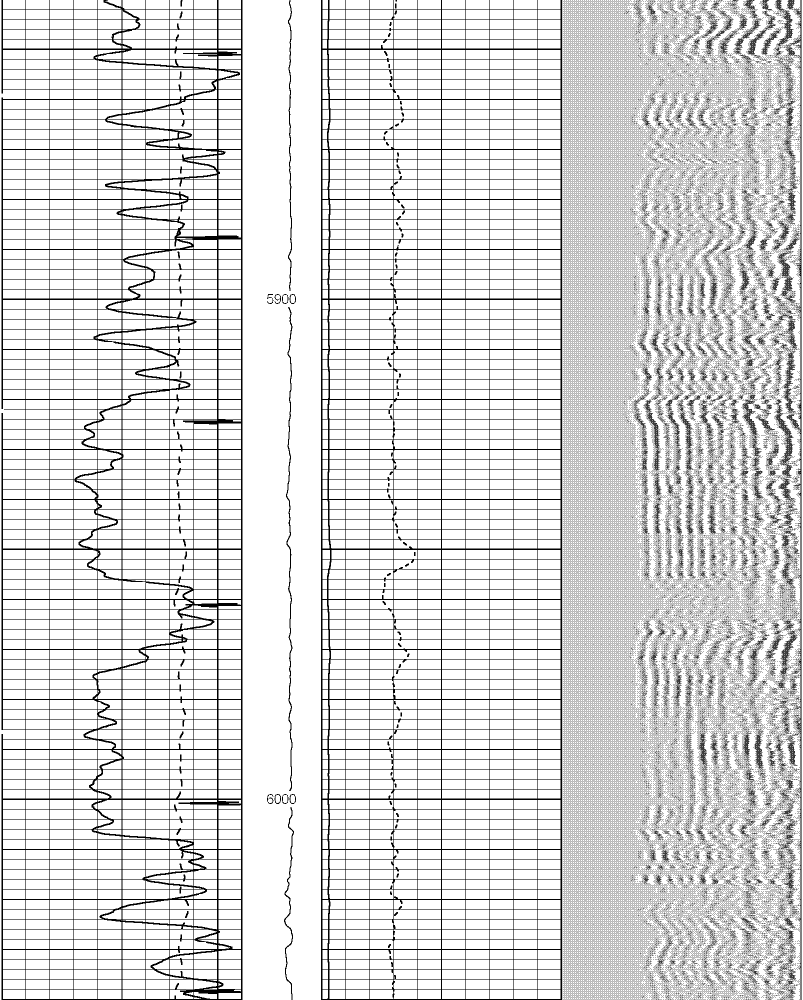


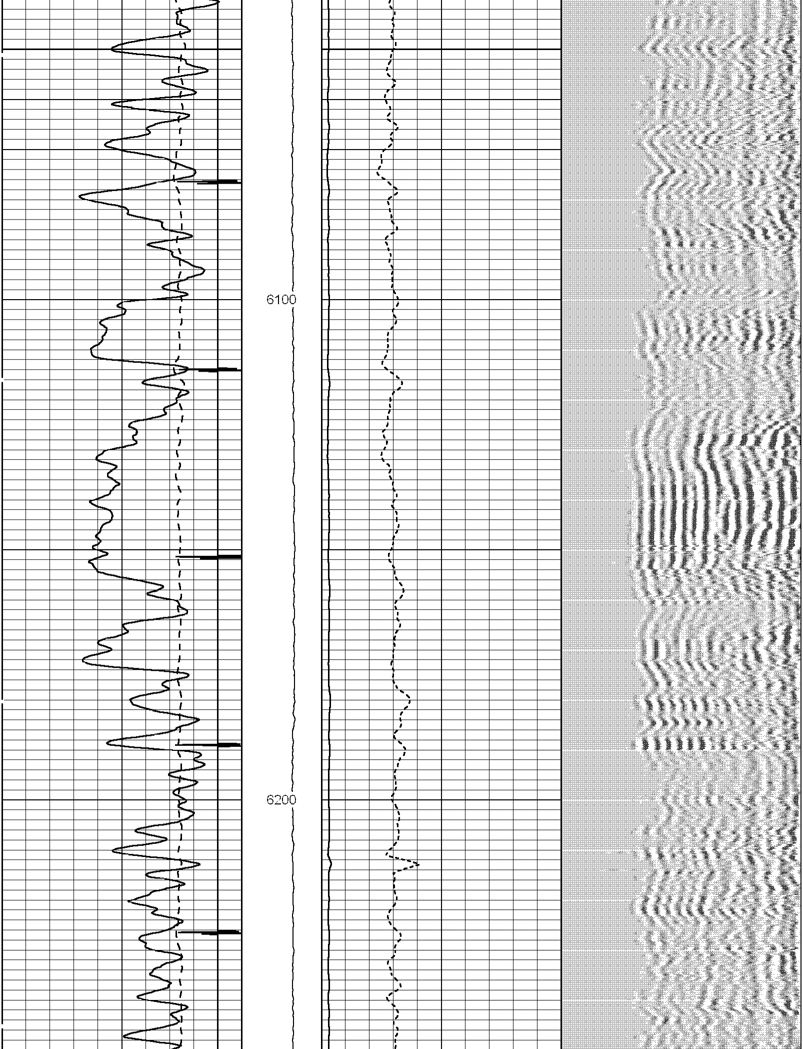


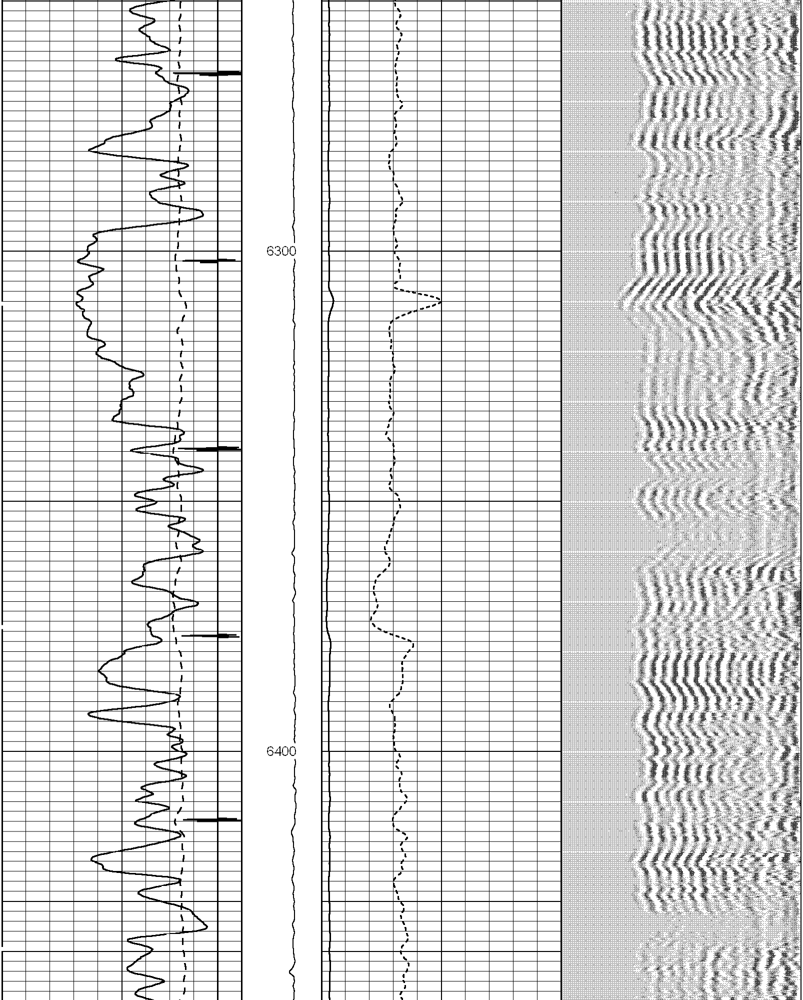


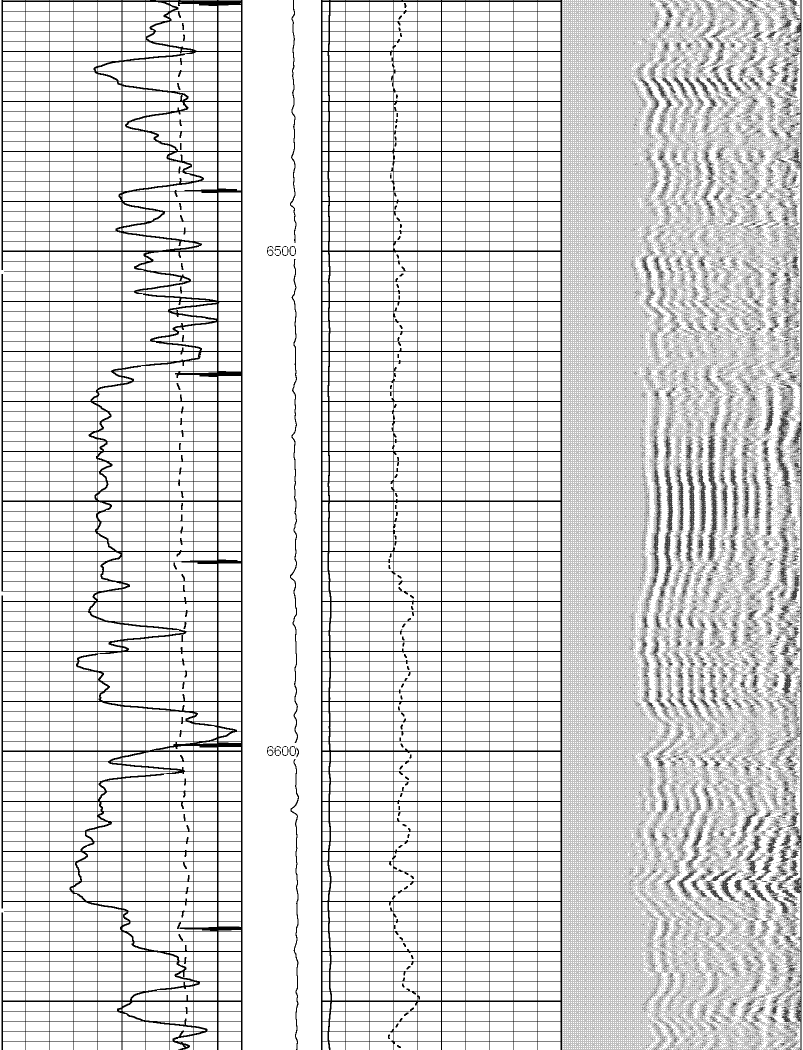


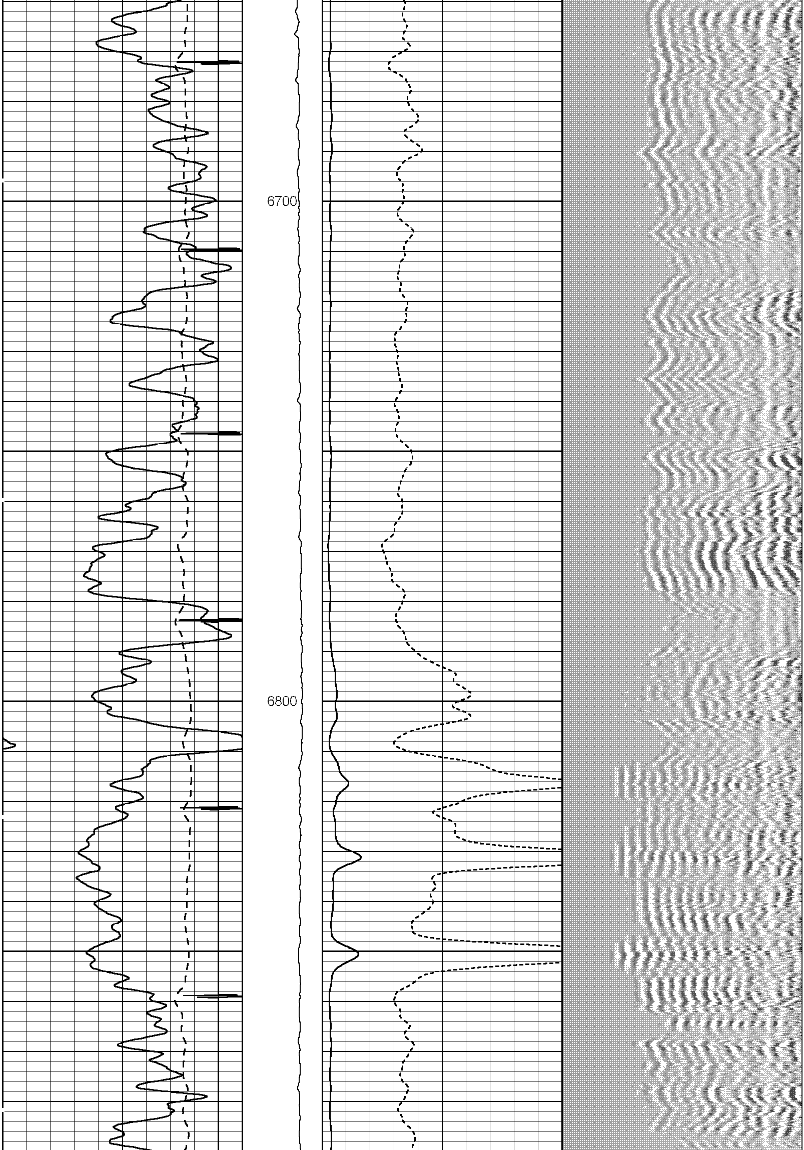


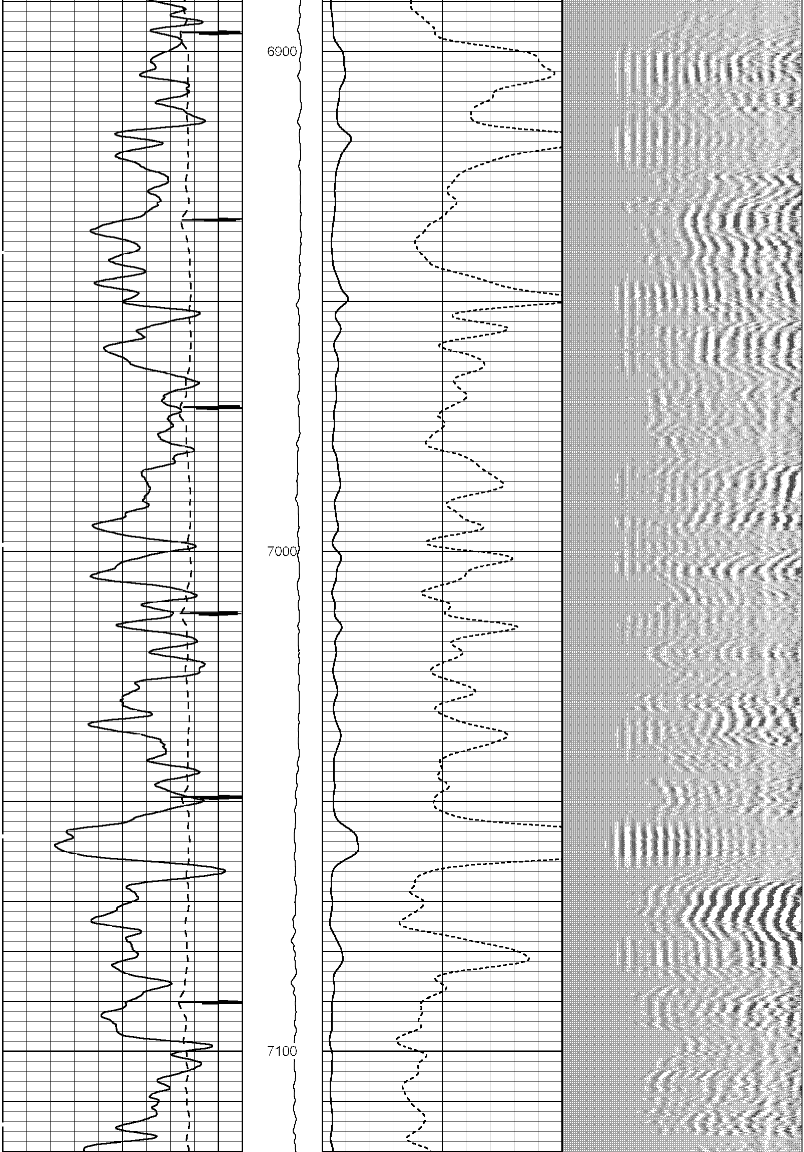


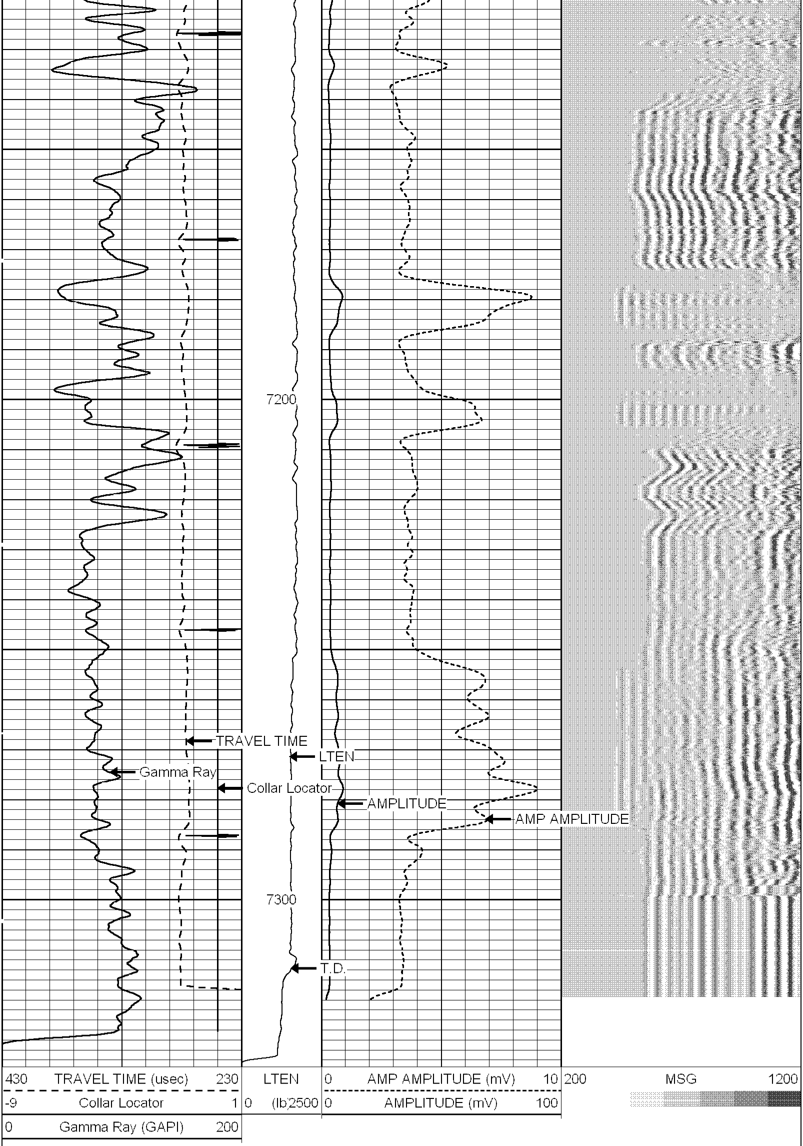












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ACOUSTIC CEMENT BOND LOG

MAIN LOG SECTION - PRESSURE: 1500 PSI
5"=100'

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ACOUSTIC CEMENT BOND LOG

REPEAT LOG SECTION
5"=100'

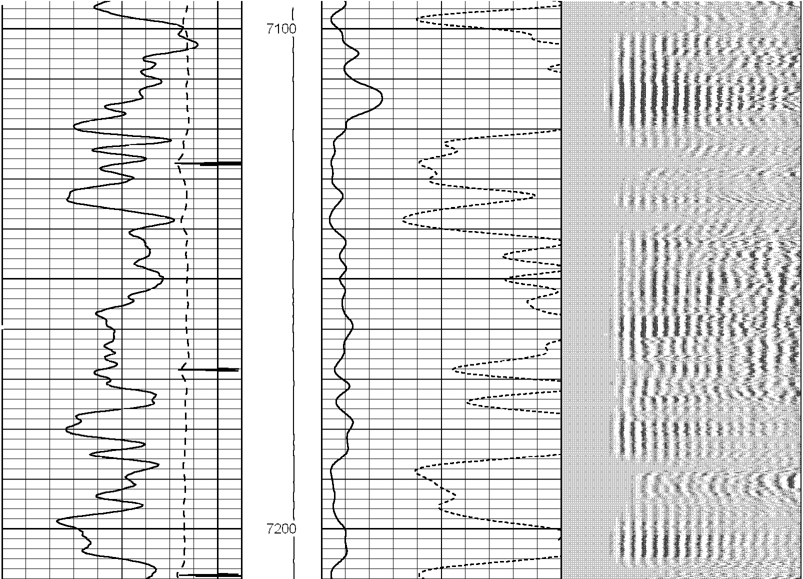
Database File:	c:\warrior\data\oxy\oxy_shell_cbl_temp\shell_697_34_16a_cbl.db
Dataset Pathname:	G_VALLEY/SHELL_697/run1/REPE_CBL1
Presentation Format:	cbl_main
Dataset Creation:	Tue Dec 01 13:30:47 2009 by Log Halliburton Casedho
Charted by:	Depth in Feet scaled 1:240

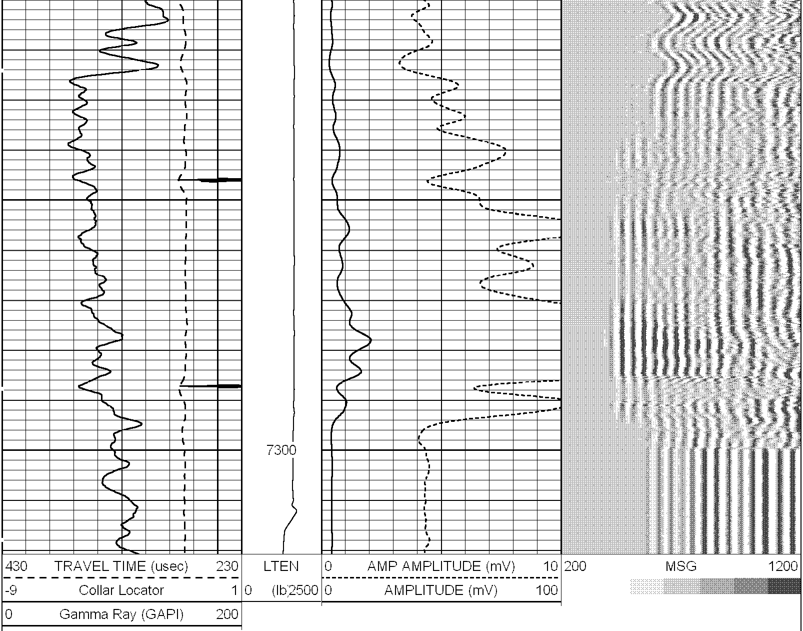
430 TRAVEL TIME (usec) 230
-9 Collar Locator 1
0 Gamma Ray (GAPI) 200

LTEN
0 (lb) 2500

0 AMP AMPLITUDE (mV) 10
0 AMPLITUDE (mV) 100

200 MSG 1200





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ACOUSTIC CEMENT BOND LOG

REPEAT LOG SECTION

5"=100'

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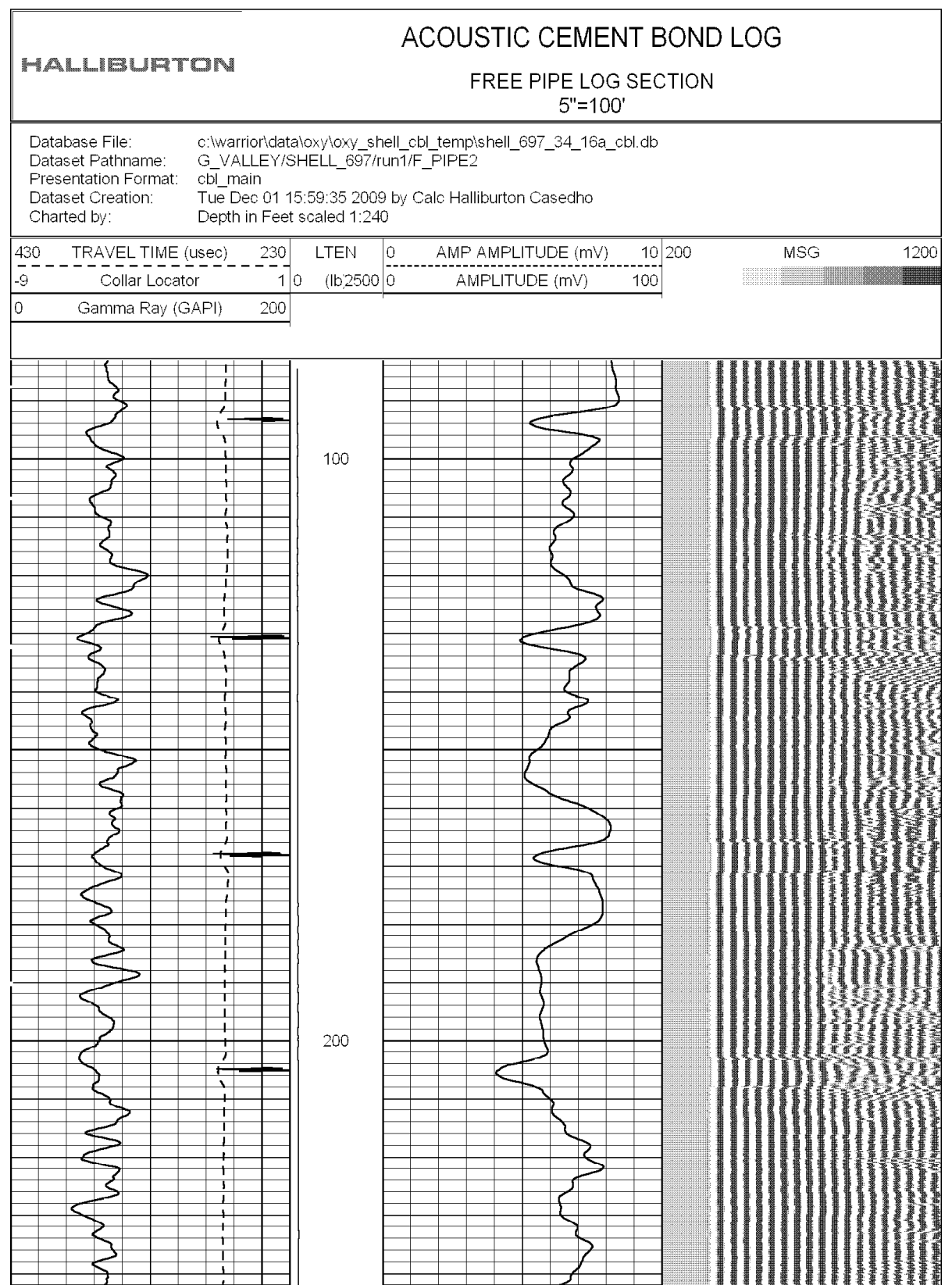
ACOUSTIC CEMENT BOND LOG

FREE PIPE LOG SECTION
5"=100'

Database File: c:\warrior\data\oxy\oxy_shell_cbl_temp\shell_697_34_16a_cbl.db
Dataset Pathname: G_VALLEY/SHELL_697/run1/F_PIPE2
Presentation Format: cbl_main
Dataset Creation: Tue Dec 01 15:59:35 2009 by Calc Halliburton Casedho
Charted by: Depth in Feet scaled 1:240



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ACOUSTIC CEMENT BOND LOG

FREE PIPE LOG SECTION
5"=100'

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TEMPERATURE LOG

5"=100'

Database File: c:\warrior\data\oxy\oxy_shell_cbl_temp\shell_697_34_16a_cbl.db
Dataset Pathname: G_VALLEY/SHELL_697/run1/LD_TEMP2
Presentation Format: temp
Dataset Creation: Wed Dec 02 17:02:07 2009
Charted by: Depth in Feet scaled 1:240

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TEMPERATURE LOG

5"=100'

Calibration Report

Database File: C:\Warrior\Data\OXY\OXY_SHELL_CBL_TEMP\shell_697_34_16a_cbl.db
Dataset Pathname: G_VALLEY/SHELL_697/run1/LD_TEMP2
Dataset Creation: Wed Dec 02 17:02:07 2009

Temperature Calibration Report

Serial Number: 081013
Tool Model: 1.375TEMP
Performed: Tue Dec 01 00:45:10 2009

	Reference		Reading	
Low Reference:	0.00	degF	0.00	cps
High Reference:	1.00	degF	10.00	cps

Gain: 0.10
Offset: 0.00
Delta Spacing 1

Gamma Ray Calibration Report

Type / Serial: Probe / 081008

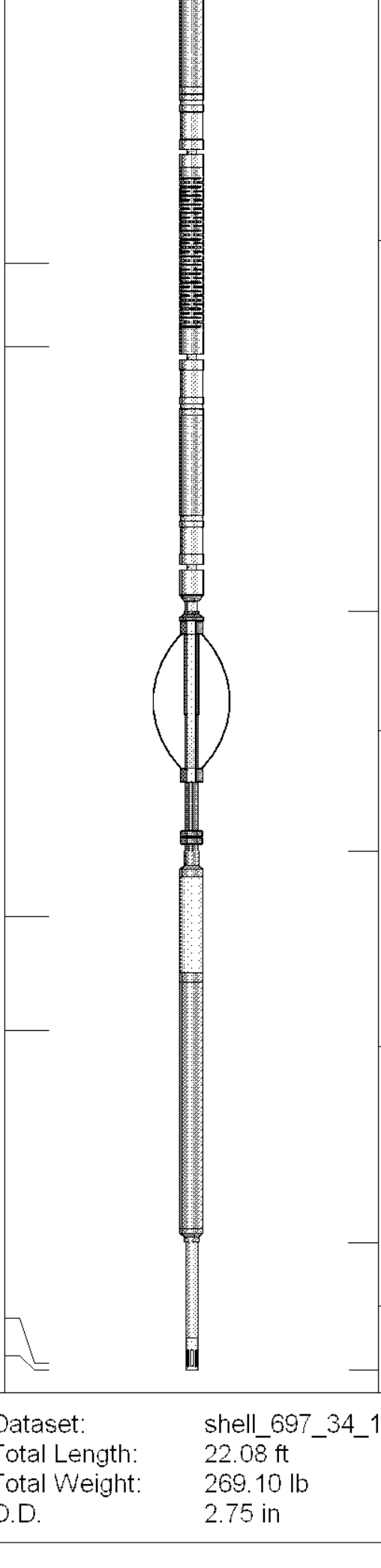
SHOP CALIBRATION	Tue Dec 01 00:50:18 2009				
	Counts/Sec.	Gain	Offset	Jig	Units
Background	82.2				cps
Calibrator	318.6				cps
		0.9728			GAPI/cps
PRIMARY VERIFICATION	Tue Dec 01 00:52:39 2009				
Background	79.1				cps
Calibrator	312.2				cps
Difference				233.0	GAPI
BEFORE SURVEY VERIFICATION					
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

Cement Bond Log Calibration Report

Serial Number: 070571
Tool Model: Probe
Performed: Tue Dec 01 09:02:21 2009

Depth: 106.903 ft
Casing Diameter: 4.5 in

	3' Spacing	5' Spacing	
Signal Zero:	2	2	mV
Calibrated Amplitude:	82	82	mV
Reading at Signal Zero:	-0.00012207	0.000488281	V
Reading in Free Pipe:	1.49036	1.27739	V
Gain:	53.674	62.6515	
Offset:	2.00655	1.96941	

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			STNDRD Standard Cable Head - F.N. 1 3/8"	1.15	1.44	1.10
			CENT-Probe (PT_MONO2)	2.88	2.75	35.00
WVF3	13.32		CBL-Probe (070571) Probe 2.75" Dual Receiver Bond	8.92	2.75	108.00
WVF5	12.32					
			CENT-Probe (PT_MONO2)	2.88	2.75	35.00
CCL	5.46					
GR	4.08		GR-Probe (081008) Probe 2.75" 4 Channel Pulse	4.71	2.75	60.00
TEMP	0.08		TEMP-1.375TEMP (081013) Temperature Tool	1.54	1.38	30.00
LLMTEN	0.00					

Dataset: shell_697_34_16a_cbl.db: G_VALLEY/SHELL_697/run1/LD_TEMP2
Total Length: 22.08 ft
Total Weight: 269.10 lb
O.D. 2.75 in

Company	OXY USA WTP LP		
Well	SHELL 697-34-16A		
Field	GRAND VALLEY		
County	GARFIELD	State	CO

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ACOUSTIC CEMENT BOND/
TEMPERATURE LOG