HALLIBURTON

RADIAL CEMENT BOND LOG GR-CCL

Company FOUNDATION ENERGY MANAGEMENT,LLC
Well STATE 36-3-9
Field WILCAT
County WELD State CO

Company FOUNDATION ENERGY MANAGEMENT,LLC
Well STATE 36-3-9
Field WILCAT
County WELD State CO
API No.: 05-123-19794-010000 Serv #: 900749448
Location: NE NW
Other Services
JB,GR -RMTi

Sec: 36 Twp: 6N Rge: 61W

Permanent Datum	GL	Elevation	4629'	Elevation
Log Measured From	KB	12.5 Ft. above perm. datum		K.B. 4641.5'
Drilling Measured From	KB			D.F.
				G.L. 4629'

Date @ Time Logged	23-SEP-2013	Type Fluid in Hole	WATER
Run No.	ONE	Density of Fluid	8.4PPG
Depth - Driller	6803 ft	Fluid Level	500 ft
Depth - Logger	6786 ft	Cement Top Est. Logged	N/A
Bottom - Logged Interval	6791 ft	Equipment / Location	11808537 / RS
Top - Log Interval	500 ft	Recorded by	PEDRO GONZALEZ BAQUEIRO
Max. Recorded Temp.	n/a	Witnessed by	JACK RICH

CEMENTING DATA	Surface	Protection	Production	Liner
	String	String	String	
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
				8.625"	24#	SURFACE	327'
				5.5"	15.5#	SURFACE	6803'

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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 WHICH 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

HES RADIAL CEMENT BOND LOG CORRELATED BY KELLY BUSHING 12.5 FT
LOGGED INTERVALS PER CUSTOMER REQUEST
REPEAT PASS SECTION RECORDED ON ZERO PSI
MAIN PASS SECTON RECORDED ON ZERO PSI AT THE WATER LEVEL 500 FT

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES ROCK SPRING WY

Service Ticket No. 900749448 API No. 05-123-19794-01 PGM Ver 101102-R5

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

EQUIPMENT DATA

RADIAL CEMENT BONG		TELEMETRY					
Run No.	ONE	Run No.	ONE	Run No.		Run No.	
Serial No.	1120	Serial No.	10009185	Serial No.		Serial No.	
Model No.	RBT004	Model No.	TTTCU-002	Model No.		Model No.	
Diameter	3 1/8	Diameter	1.69"	Diameter		Diameter	

LOGGING DATA

General Data

Pass	Depths		Well Head	Speed	Logging Run Comments
No.	From	To	Pressure	Ft/Min	
ONE	6786'	500'	0	60	
TWO	6786'	6500'	0	60	

	GAMMA RAY		AMP		MSG			
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ONE	0	150	0	100	200	1200		

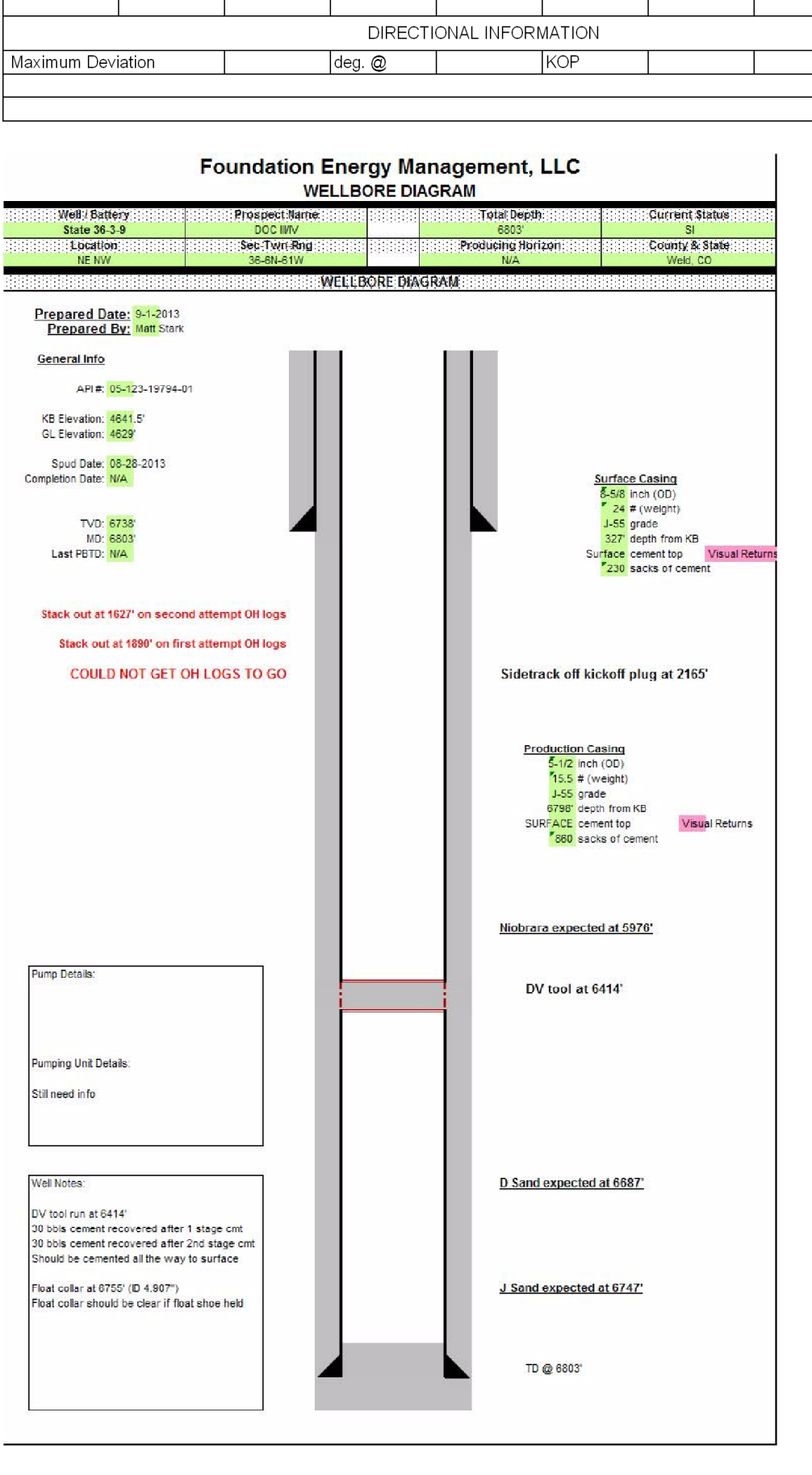
DIRECTIONAL INFORMATION

Maximum Deviation		deg. @		KOP	

Foundation Energy Management, LLC
WELLBORE DIAGRAM

Well / Battery	Prospect Name		Total Depth	Current Status
State 36-3-9	DOC IMV		6803'	SI
Location	Sec-Twn-Rng		Producing Horizon	County & State
NE NW	36-6N-61W		N/A	Weld, CO

WELLBORE DIAGRAM


Prepared Date: 9-1-2013
Prepared By: Matt Stark
General Info
API #: 05-123-19794-01
KB Elevation: 4641.5'
GL Elevation: 4629'
Spud Date: 08-28-2013
Completion Date: N/A
TVD: 6738'
MD: 6803'
Last PBTD: N/A
Stack out at 1627' on second attempt OH logs
Stack out at 1890' on first attempt OH logs
COULD NOT GET OH LOGS TO GO
Surface Casing
8-5/8 inch (OD)
24 # (weight)
J-55 grade
327' depth from KB
Surface cement top
Visual Returns
230 sacks of cement
Sidetrack off kickoff plug at 2165'
Production Casing
5-1/2 inch (OD)
15.5 # (weight)
J-55 grade
6798' depth from KB
SURFACE cement top
Visual Returns
860 sacks of cement
Niobrara expected at 5976'
DV tool at 6414'
Pump Details:
Pumping Unit Details:
Still need info
Well Notes:
DV tool run at 6414'
30 bbls cement recovered after 1 stage cmt
30 bbls cement recovered after 2nd stage cmt
Should be cemented all the way to surface
Float collar at 6755' (ID 4.907")
Float collar should be clear if float shoe held
D Sand expected at 6687'
J Sand expected at 6747'
TD @ 6803'

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MAIN PASS

5"=100'

Database File: state 36-3--9_cbl.db
Dataset Pathname: WC/ST36-3-9/run1/MAIN
Presentation Format: radial
Dataset Creation: Mon Sep 23 13:09:28 2013 by Log Halliburton Casedho
Charted by: Depth in Feet scaled 1:240

400	TT (usec)	200	TENSION	0	AMP (mV)	100	0	AMPAVG	100	200 MSG 1200	1 SECTORS 8
-500	CCL	50	0 (lb)	1300	0 AMPx5 (mV)	10	0	AMPMAX	100		1 100
0	GR (GAPI)	200					0	AMPMIN	100		

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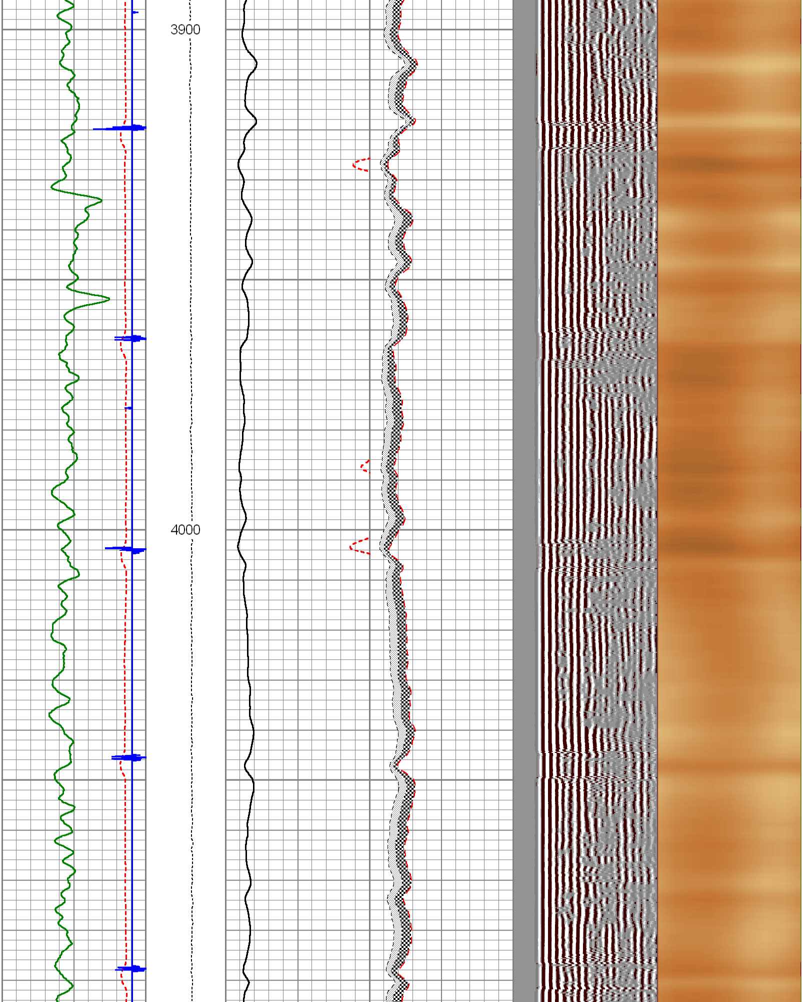
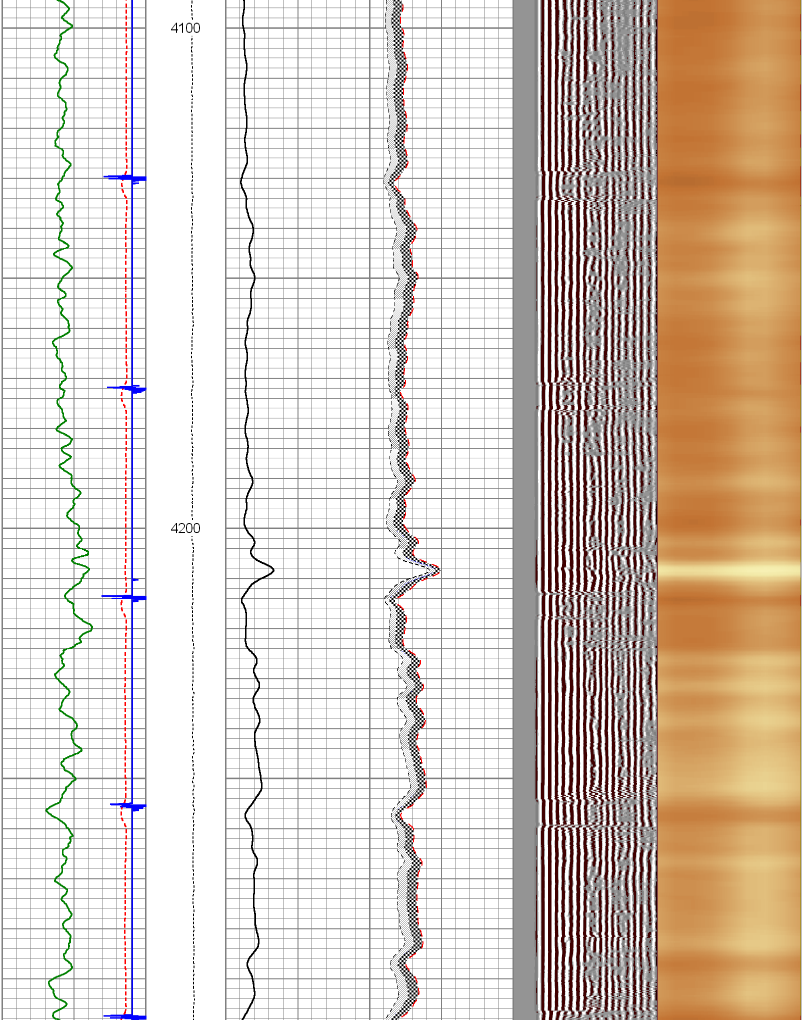
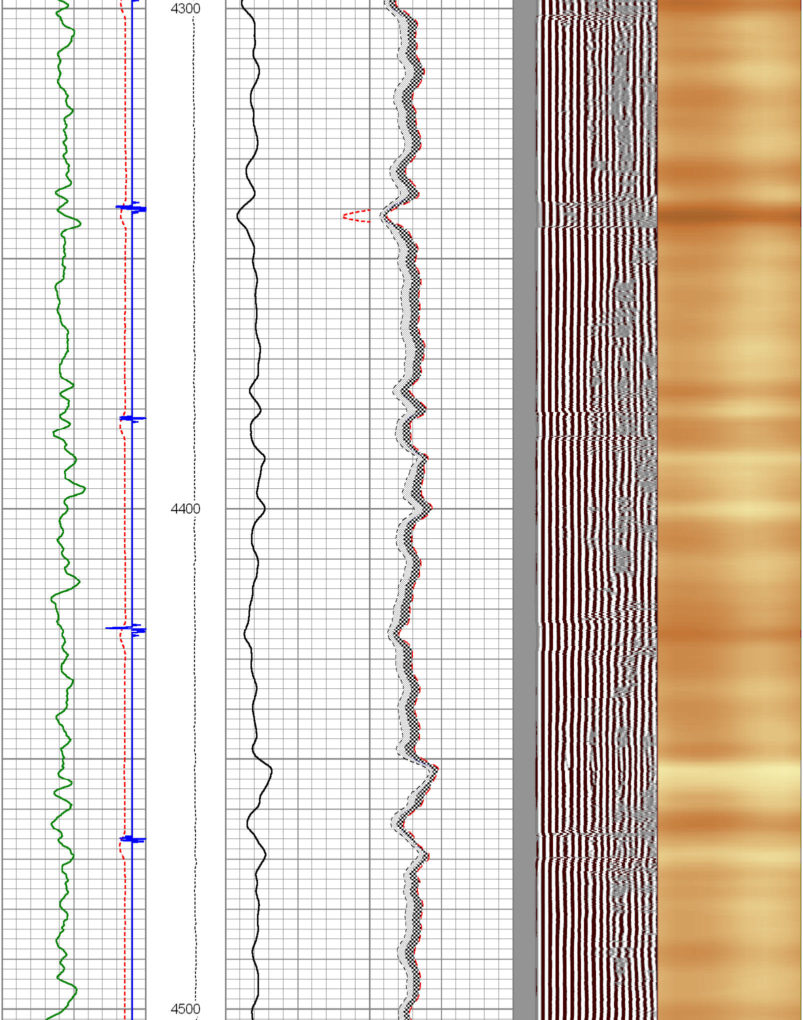
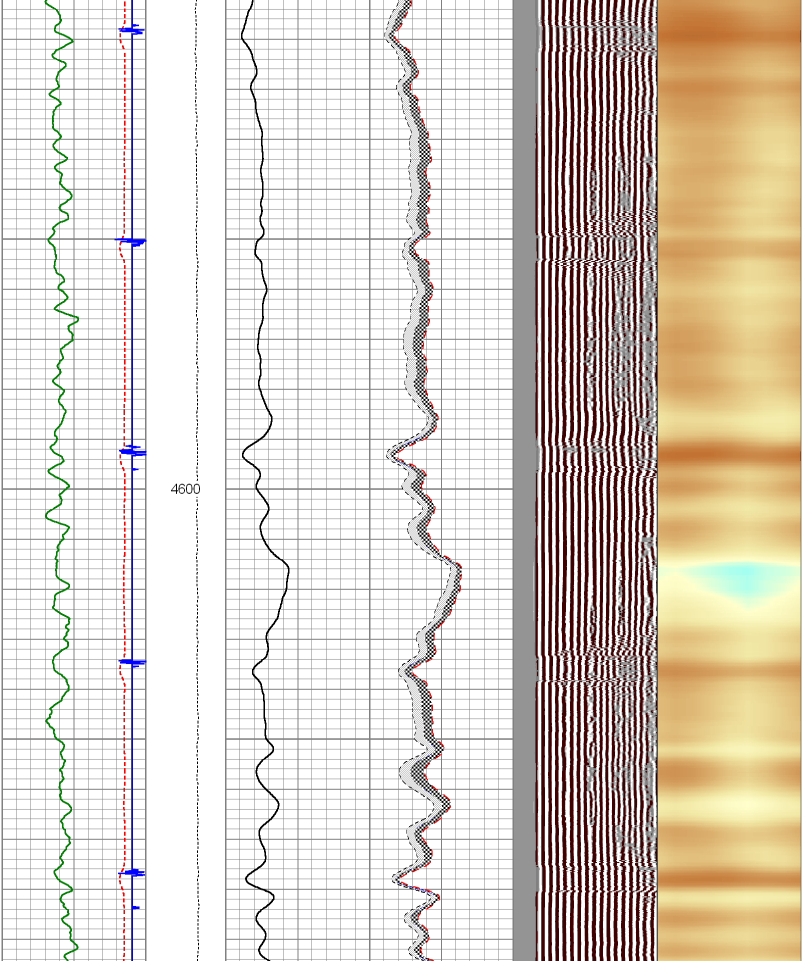
MAIN PASS

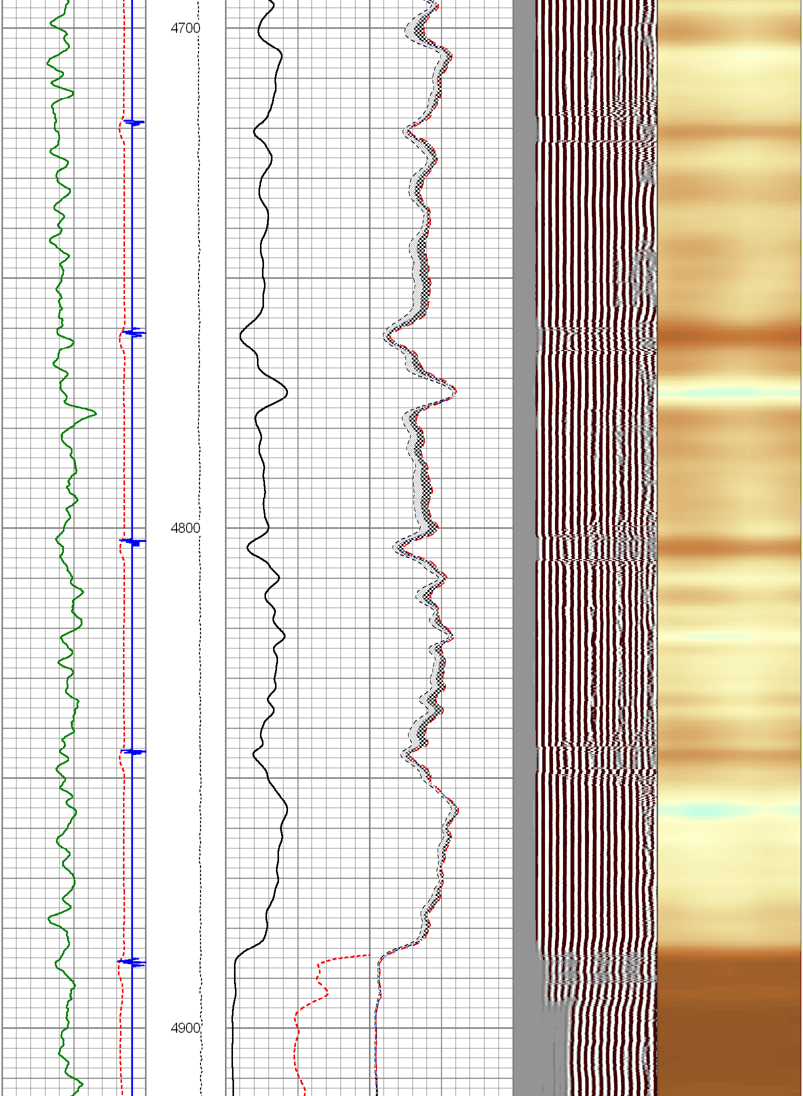
5"=100'

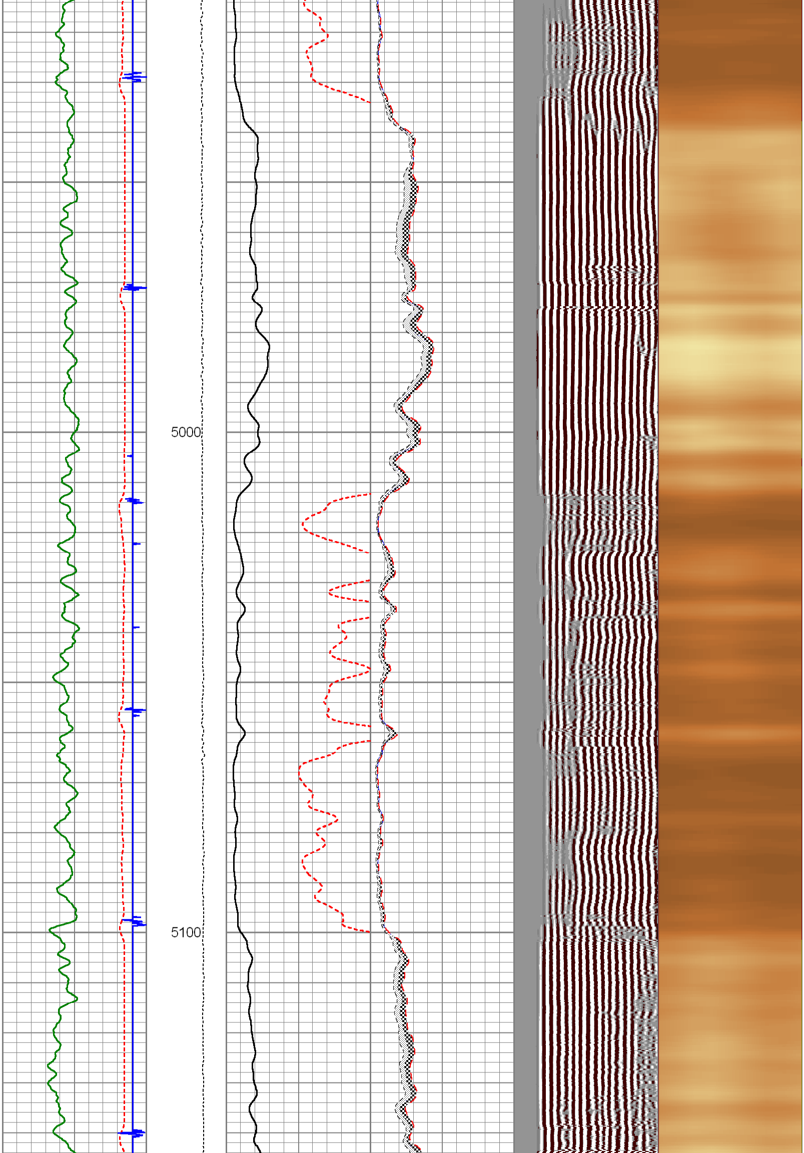


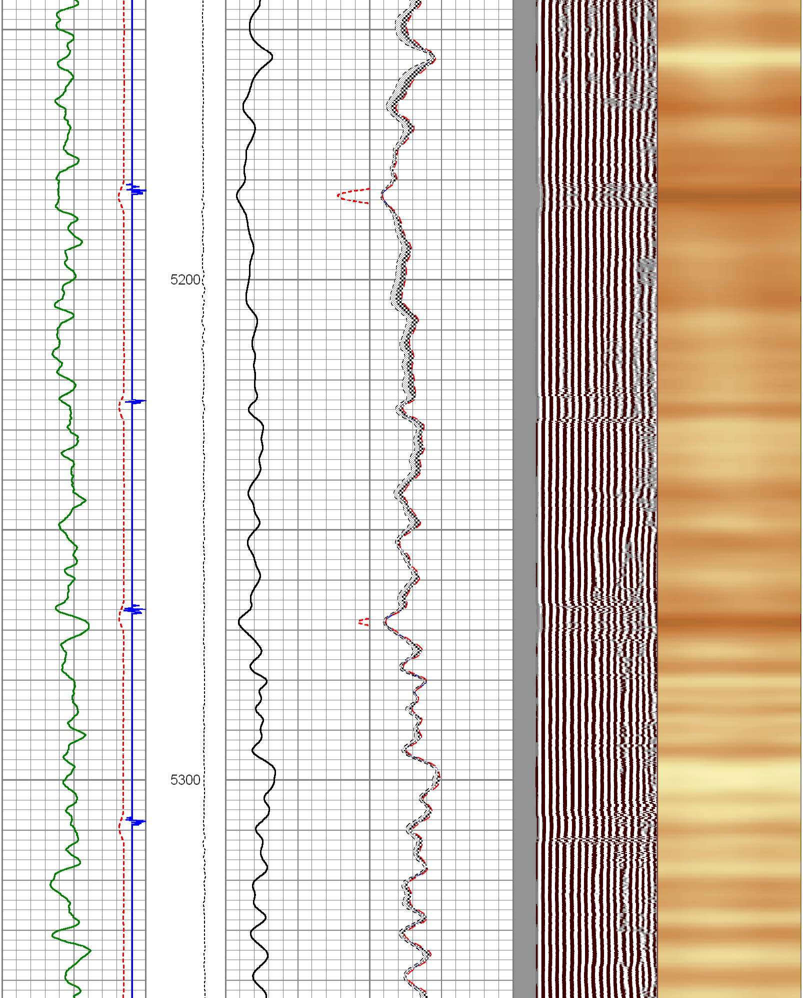


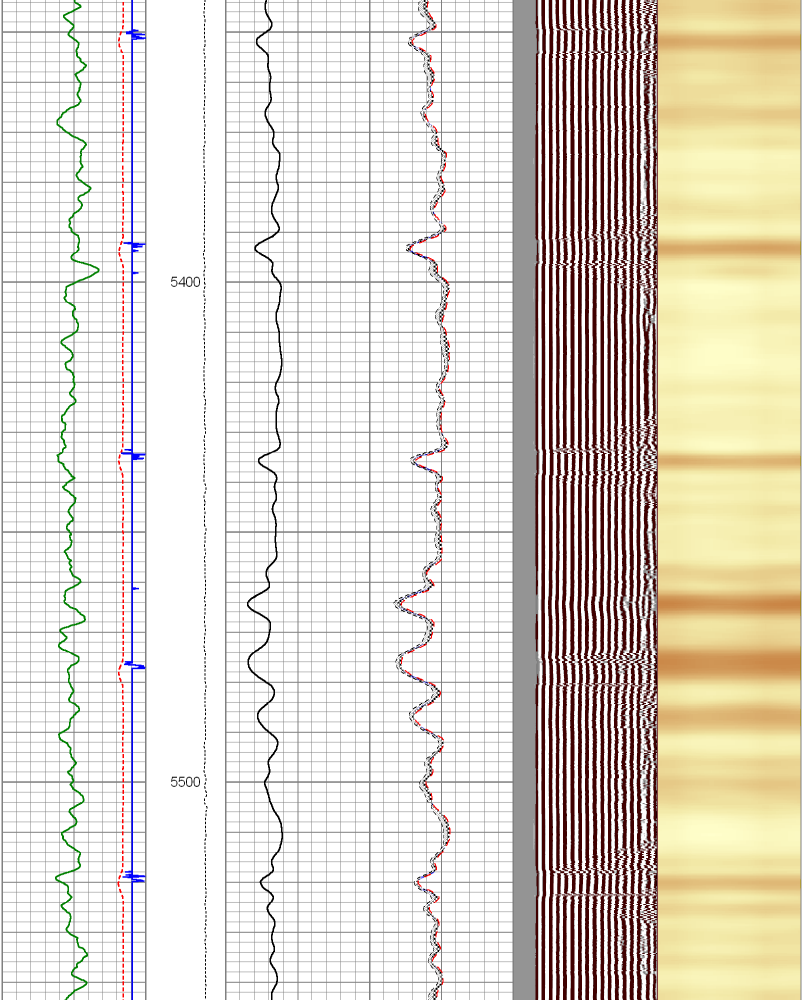


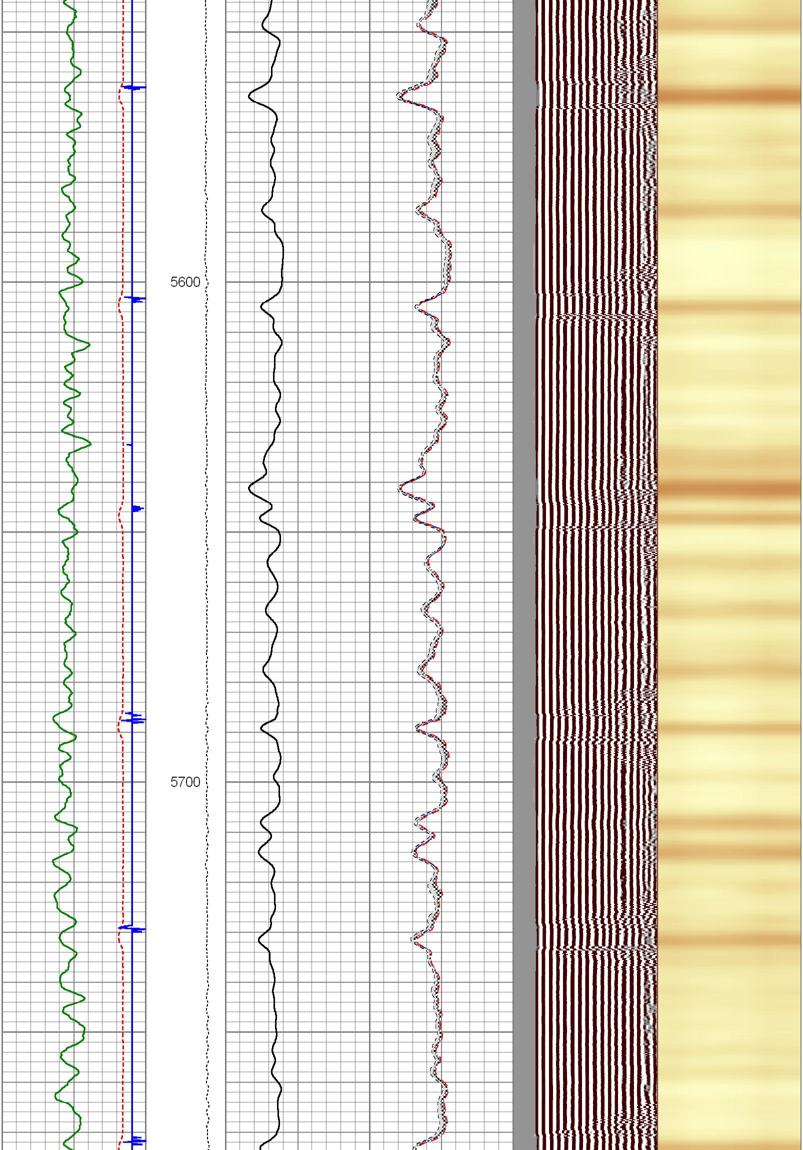


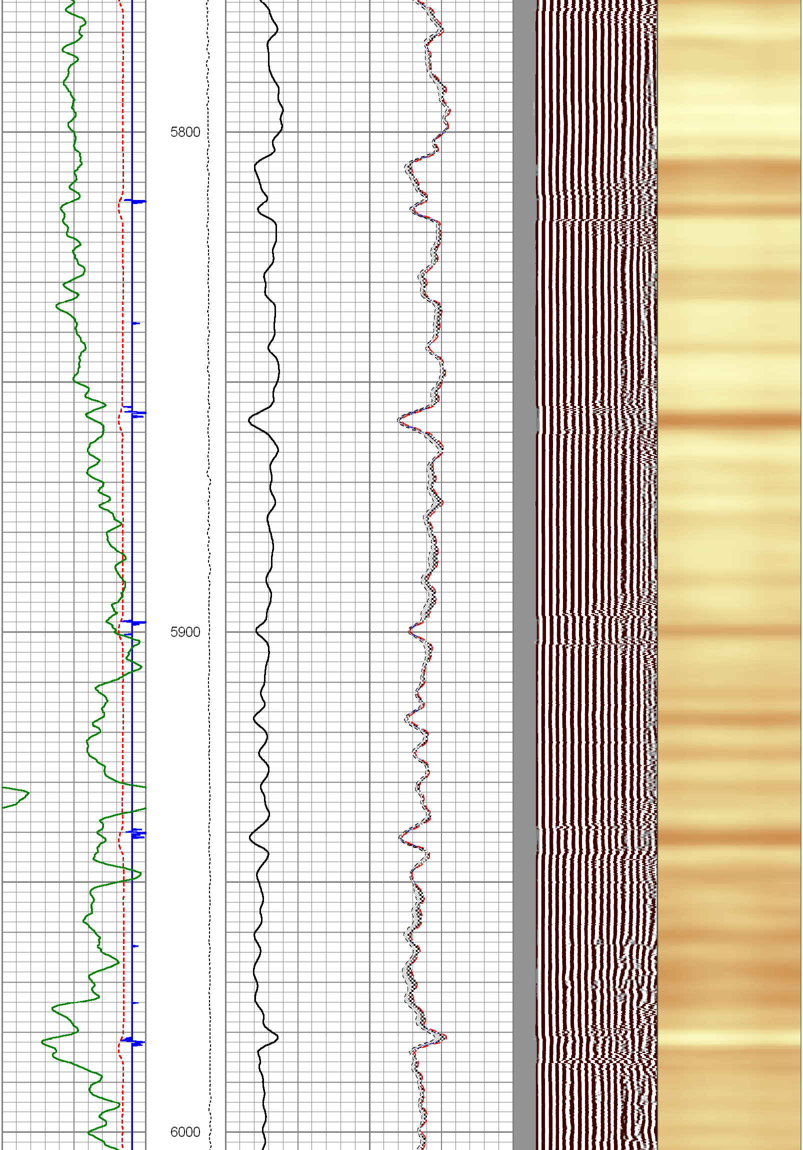


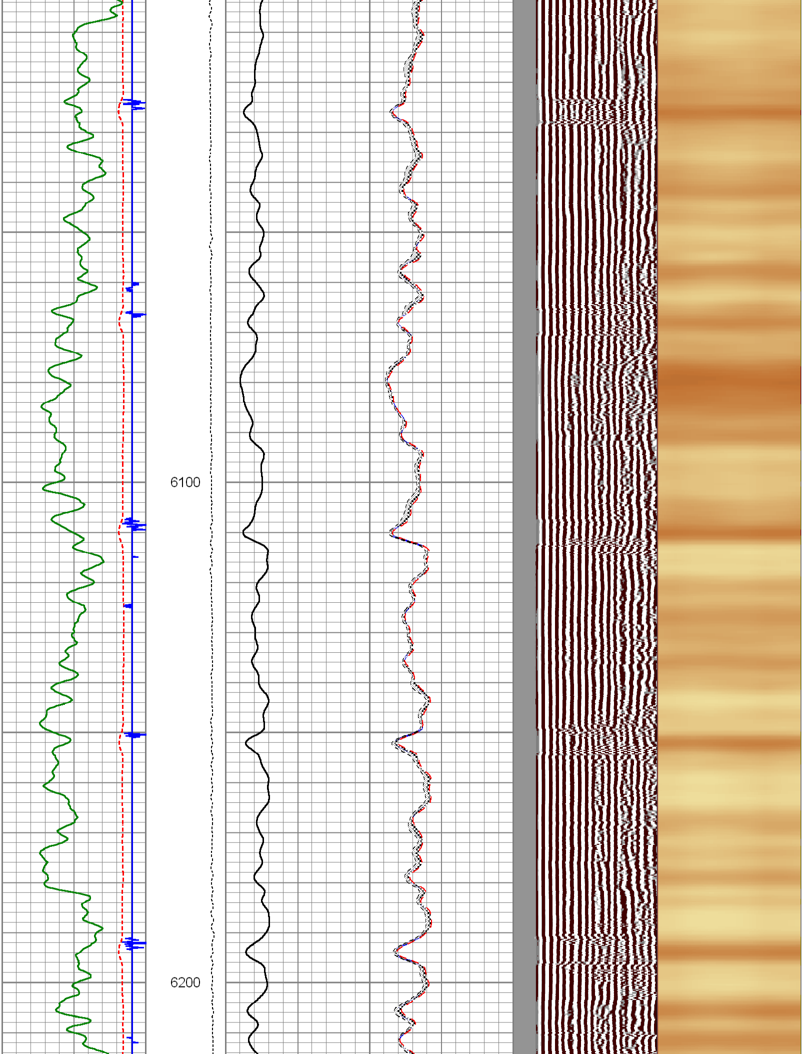


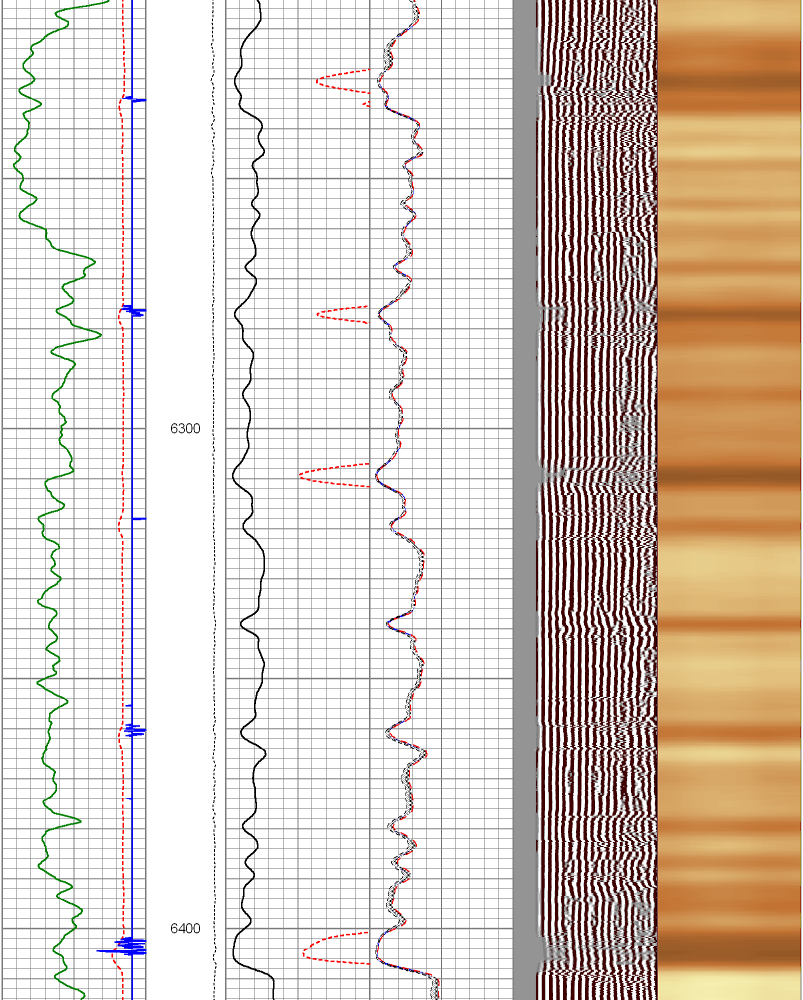


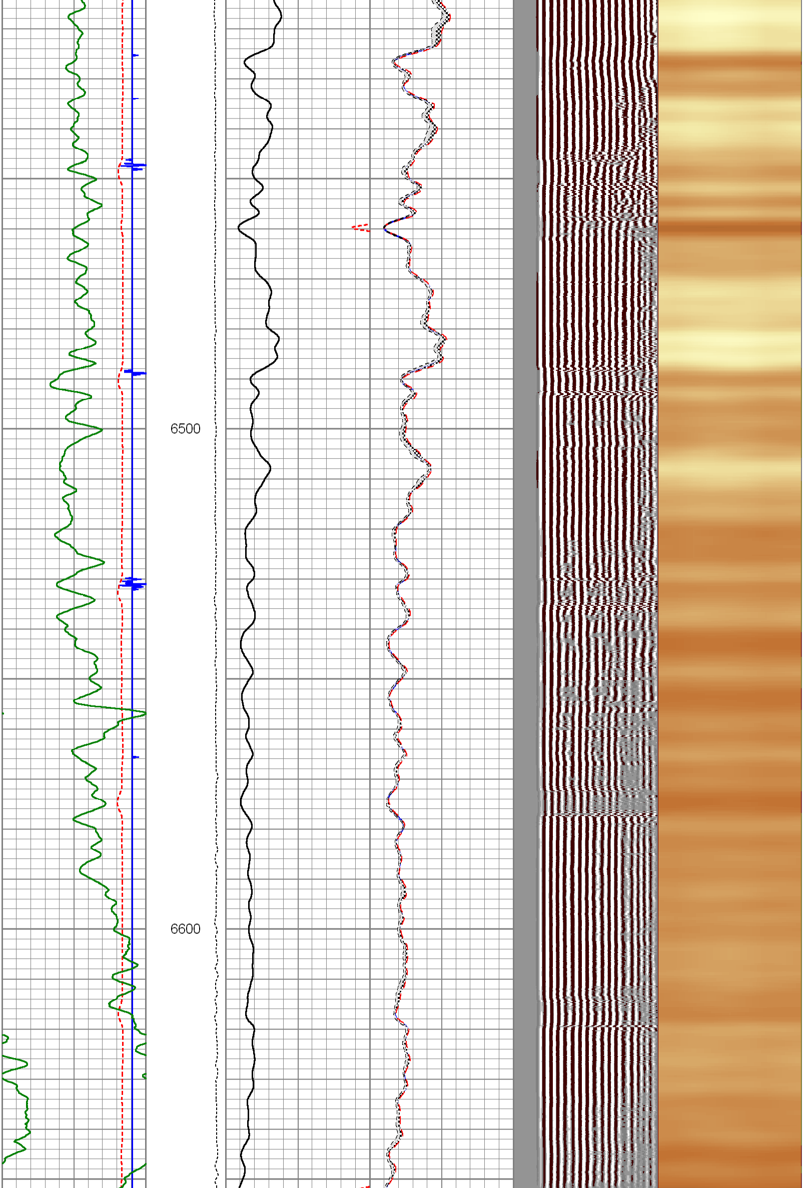


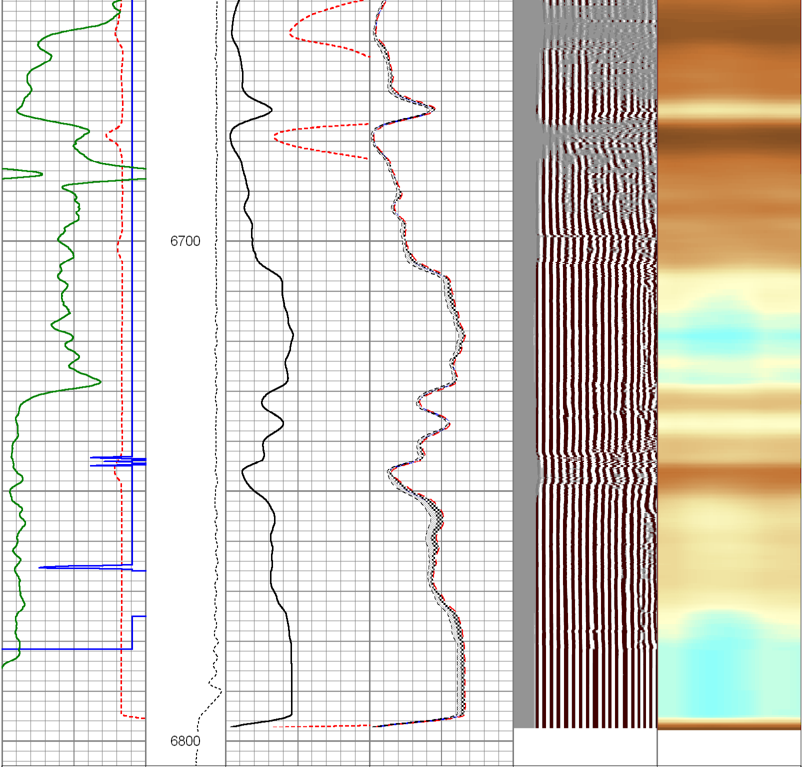












400 TT (usec) 200	TENSION	0 AMP (mV) 100	0 AMPAVG 100	200 MSG 1200	1 SECTORS 8
-500 CCL 50	0 (lb)1300	0 AMPx5 (mV) 10	0 AMPMAX 100		1 100
0 GR (GAPI) 200			0 AMPMIN 100		

HALLIBURTON

MAIN PASS

5"=100'

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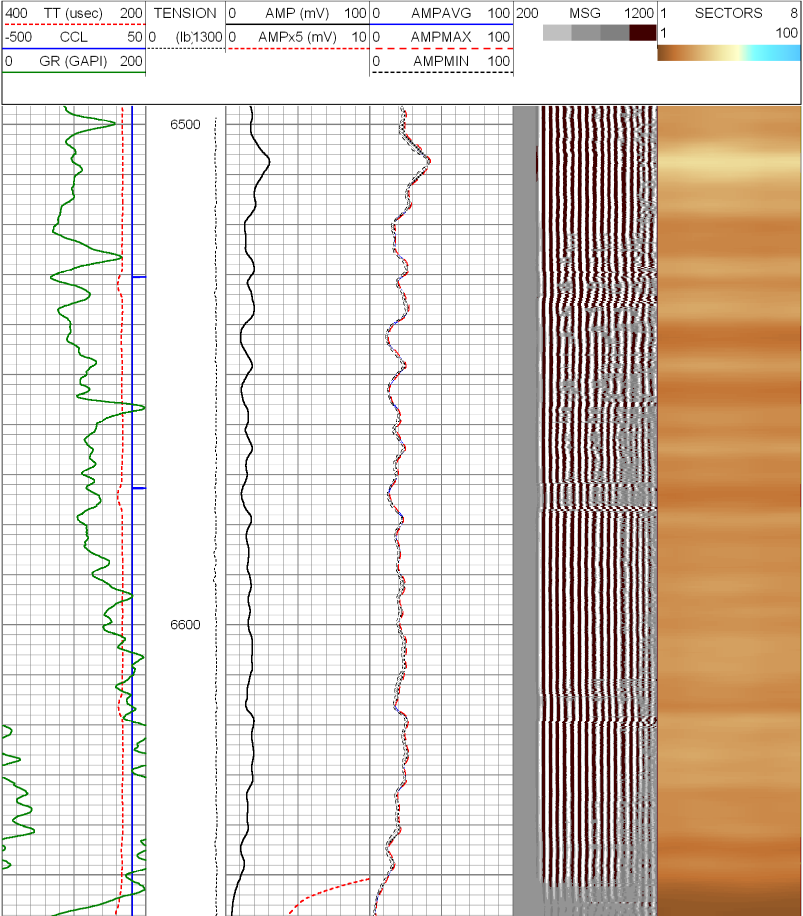
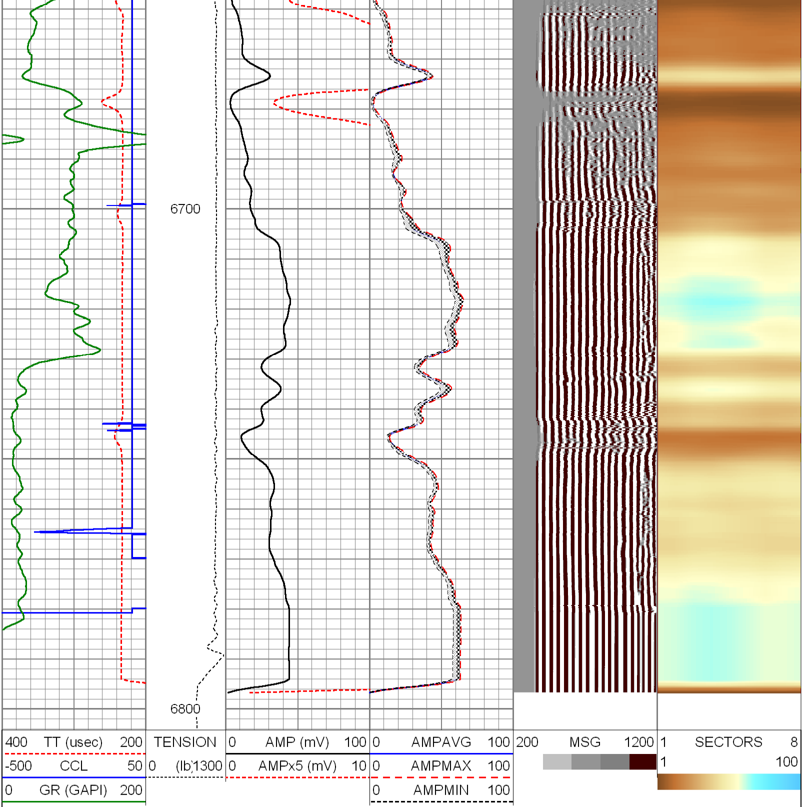
REPEAT PASS

5"=100'

Database File:	state 36-3--9_cbl.db
Dataset Pathname:	WC/ST36-3-9/run1/REPEAT
Presentation Format:	radial
Dataset Creation:	Mon Sep 23 12:59:26 2013 by Log Halliburton Casedho
Charted by:	Depth in Feet scaled 1:240





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REPEAT PASS

5"=100'

Calibration Report

Database File:	state 36-3--9_cbl.db
Dataset Pathname:	WC/ST36-3-9/run1/MAIN
Dataset Creation:	Mon Sep 23 13:09:28 2013 by Log Halliburton Casedho

Segmented Cement Bond Log Calibration Report

Serial Number:	1120	
Tool Model:	004	
Calibration Casing Diameter:	7.000	in
Calibration Depth:	327.193	ft

Master Calibration, performed Thu Aug 15 13:44:37 2013:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.049	1.008	2.000	62.165	62.733	-1.063
5FT	0.040	1.076	2.000	62.165	58.067	-0.339
S1	0.049	0.990	0.000	100.000	106.238	-5.190
S2	0.047	1.090	0.000	100.000	95.813	-4.458
S3	0.049	0.998	0.000	100.000	105.366	-5.142
S4	0.048	0.892	0.000	100.000	118.459	-5.640
S5	0.048	1.004	0.000	100.000	104.632	-5.032
S6	0.048	0.952	0.000	100.000	110.518	-5.261
S7	0.048	0.891	0.000	100.000	118.673	-5.706
S8	0.048	0.963	0.000	100.000	109.253	-5.212

Calibration Report

Serial Number:	1120
Tool Model:	004
Performed:	

	Reference (degF)	Reading ()
Low:	0.000	0.000
High:	1.000	1.000
	Gain = 1.000	Offset = 0.000

Gamma Ray Calibration Report

Type / Serial: 002 / 10009185

SHOP CALIBRATION Sat Aug 03 10:01:25 2013

	Counts/Sec.	Gain	Offset	Jig	Units
Background	20.8				cps
Calibrator	143.3				cps
		1.8203			GAPI/cps

PRIMARY VERIFICATION Sat Aug 03 10:05:01 2013

	Counts/Sec.	Gain	Offset	Jig	Units
Background	46.8				cps
Calibrator	261.2				cps
Difference				214.4	GAPI

BEFORE SURVEY VERIFICATION

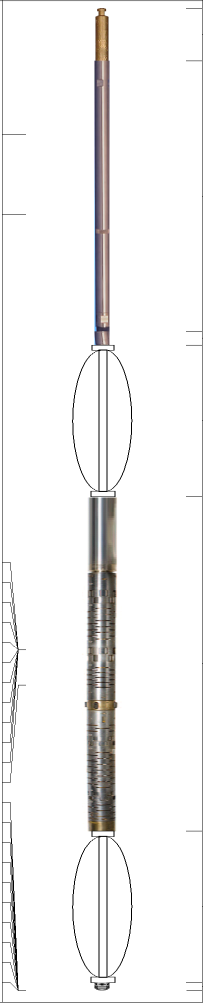
	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

AFTER SURVEY VERIFICATION

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

Sensor	Offset (ft)
CCL	24.24
GR	21.98
WVF3FT	9.65
WVFS1	9.65
WVFS2	9.65
WVFS3	9.65
WVFS4	9.65
WVFS5	9.65
WVFS6	9.65
WVFS7	9.65
WVFS8	9.65
CBLTEMP	9.65
CBLROT	9.65
WVF5FT	8.65
LLMTEN	0.00
XHUTEMP	0.00
XHUSTAT	0.00
XHUCUR1	0.00
XHUCUR2	0.00
XHUCUR3	0.00
XHUCUR4	0.00
TSTAMP	0.00
ITEMPX	0.00
HVOLTX	0.00

Schematic



Description	Len (ft)	OD (in)	Wt (lb)
STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
TTTCU-002 (10009185) Through Tubing Telemetry Cartridge - Ultrawire	7.66	1.69	37.00
AUH-001 (10004289) Adaptor Ultrawire/Halliburton	0.38	1.69	3.00
CBLINLINE	4.29	3.25	
RBT-004 (1120) Radial Bond Tool (UW 3 1/8) 20K Rated	9.48	3.13	140.00
CBLINLINE	4.29	3.25	
BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20

Dataset:	state 36-3--9_cbl.db: WC/ST36-3-9/run1/MAIN
Total Length:	27.83 ft
Total Weight:	182.20 lb
O.D.	3.25 in

Company	FOUNDATION ENERGY MANAGEMENT,LLC
Well	STATE 36-3-9
Field	WILCAT
County	WELD
State	CO

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RADIAL CEMENT BOND
LOG GR-CCL