



# RADIAL ANALYSIS BOND LOG

Baker Atlas

File No:	Company	WILLIAMS PRODUCTION COMPANY	
API No:	Well	GM 34-32	
05045178290000	Field	GRAND VALLEY	
	County	State	COLORADO
	Location	Other Services	
32 GS 96W	SHL: 2821' FNL & 1132' FEL	NONE	
GM 343-32 PAD	BHL: 987' FSL & 1913' FEL		
HBP 278	SEC 32 TWP 6S RGE 96W		
Permanent Datum	GL	Elevation	5948 ft
Log Measured From	KB	24 ft	Above P. D.
Drill Measured From	KELLY BUSHING		
		KB	5972 ft
		DF	5971 ft
		GL	5948 ft

Date	15 NOV 2010	
Run	ONE	
Service Order	574387	
Depth Driller	7196 ft	
Depth Logger	6671 ft	
Bottom Logged Interval	6667 ft	
Top Logged Interval	20 ft	
Time Started	07:00	
Time Finished	09:50	
Operator Rig Time	2.5	
Type of Fluid in Hole	WATER	
Fluid Density	N/A	
Salinity	N/A	
Fluid Level	FULL	
Logged Cement Top	N/A	
Wellhead Pressure	0 psi	
Maximum Hole Deviation	N/A	
Nominal Logging Speed	45 fpm	
Maximum Recorded Temperature	214 degF	
Reference Log	BAKER ATLAS BOND LOG	
Reference Log Date	9 SEP 2010	
Equipment No.	4214	G.J., COLORADO
Recorded By	J. OSTLER	
Witnessed By	MR. MIKE SNOW	

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In making interpretations of logs, our employees will give the customer the benefit of their best judgement. But since all interpretations are opinions based on inferences from electrical or other measurements, we cannot, and we do not guarantee the accuracy or correctness of any interpretation. We shall not be liable or responsible for any loss, cost, damages, or expenses whatsoever incurred or sustained by the customer resulting from any interpretation made by any of our employees.

Borehole Record		
Bit Size	From	To
13.5 In	SURFACE	1078 ft
7.875 In	SURFACE	7196 ft

Casing Record				
Size	Weight	Grade	From	To
9.625 In			SURFACE	1078 ft
4.5 In	11.6 lbm/ft	P-110	SURFACE	7196 ft

Remarks
LOG WAS TIED INTO A BAKER ATLAS BOND LOG
WELL WAS LOGGED WITH 0 PSI AT THE WELL HEAD
WELL WAS LOGGED AFTER SQUEEZE JOB
BHT = 214
SHORT JOINT AT 3543' TO 3564'

Equipment Data

Run	Trip	Tool	Series Number	Serial Number	Position
1	1	VDL	1426XA	10163028	CENTRALIZED
1	1	GR/CCL/NEU	2459XA	10218504	CENTRALIZED

## *PRIMARY PRESENTATION*

### *0 PSI*

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	301.094	usec	6238.400	6665.900
RAL	Amp Gate Start Near	195.478	usec	6238.400	6665.900
RAL	Amp Gate Start Radial	198.048	usec	6238.400	6665.900
RAL	Amp Gate Width Far	30.000	usec	6238.400	6665.900
RAL	Amp Gate Width Near	30.000	usec	6238.400	6665.900
RAL	Amp Gate Width Radial	30.000	usec	6238.400	6665.900
RAL	casing od	4.500	inches	6238.400	6665.900
RAL	casing wt	11.600	lbm/ft	6238.400	6665.900
RAL	FB Start Far	291.900	usec	6238.400	6665.900
RAL	FB Start Near	175.391	usec	6238.400	6665.900
RAL	FB Start Radial	175.391	usec	6238.400	6665.900
RAL	FB Thresh Far	10.000	mv	6238.400	6665.900
RAL	FB Thresh Near	4.000	mv	6238.400	6665.900
RAL	FB Thresh Radial	4.000	mv	6238.400	6665.900
RAL	Fluid Travel Time	200.000	usec/ft	6238.400	6665.900

## DEPTH OFFSETS

(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
1426XA	-16.450	ACAL	ANR	AR1	AR2	AR3	AR4
		AR5	AR6	AR7	AR8	CHV	FPR2
		FPR3	FPR5	TT3	TTR1	TTR2	TTR3
		TTR4	TTR5	TTR6	TTR7	TTR8	XAMP
1426XA	-15.450	AFAR	SIG	TT5			
2459XA	-11.340	CCL					
2459XA	-9.400	CD					

2459XA  
2459XA

-9.490  
-4.090

GR  
NEU

Created by : RAL, v4.8.008

Plotted by : PlotMgr, v5.4.504

Company : WILLIAMS PRODUCTION COMPANY

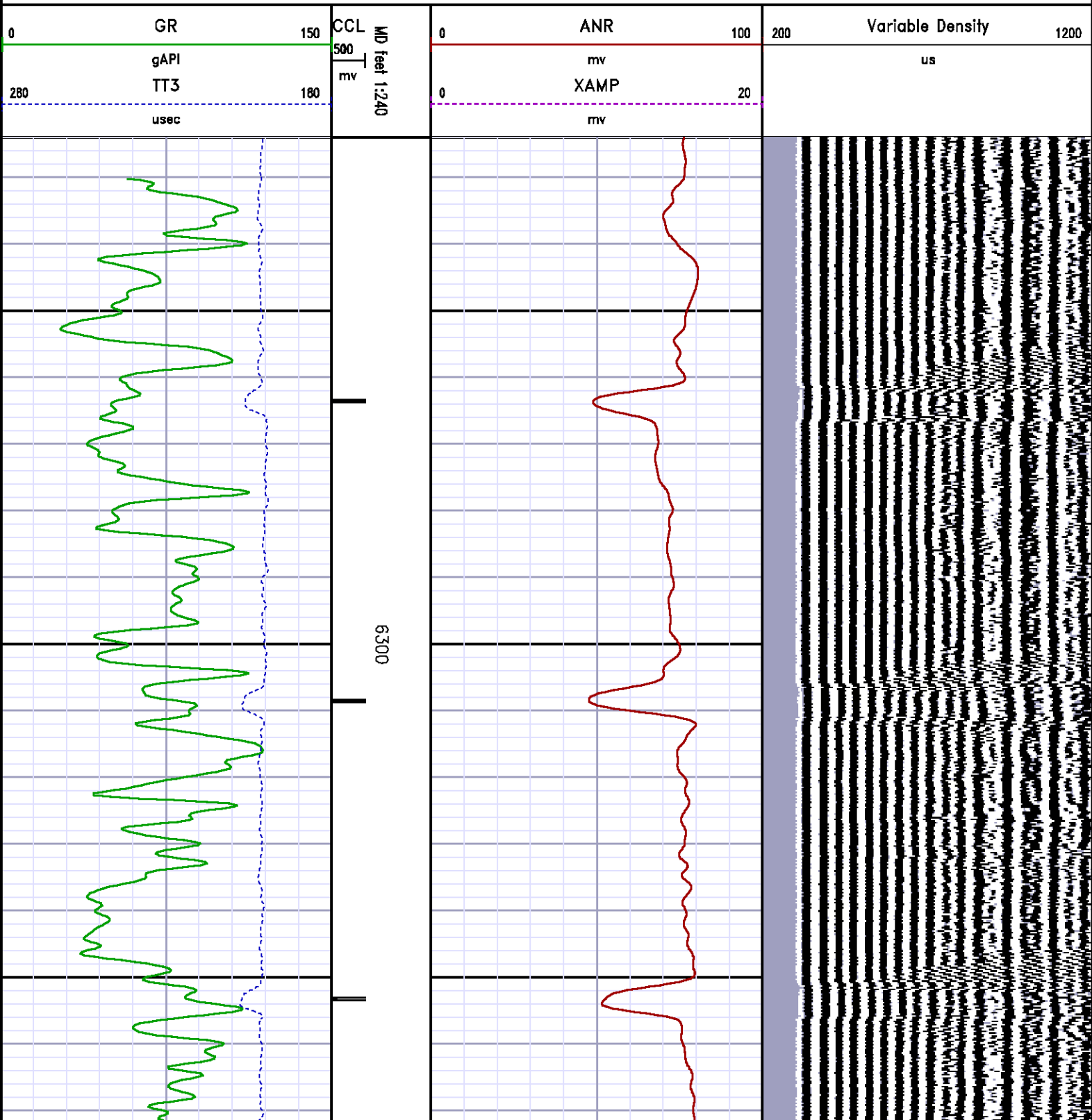
Well : GM 34-32

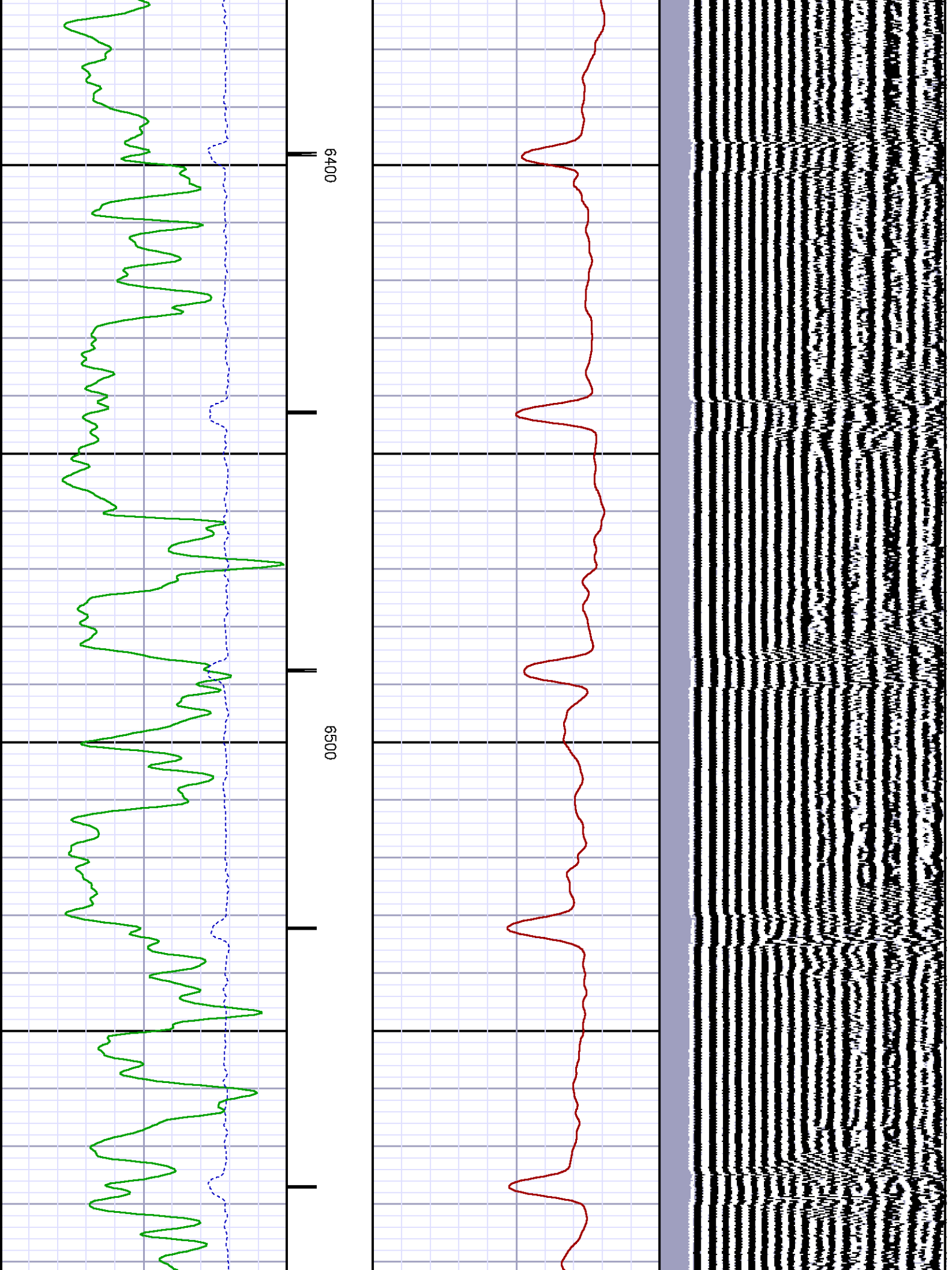
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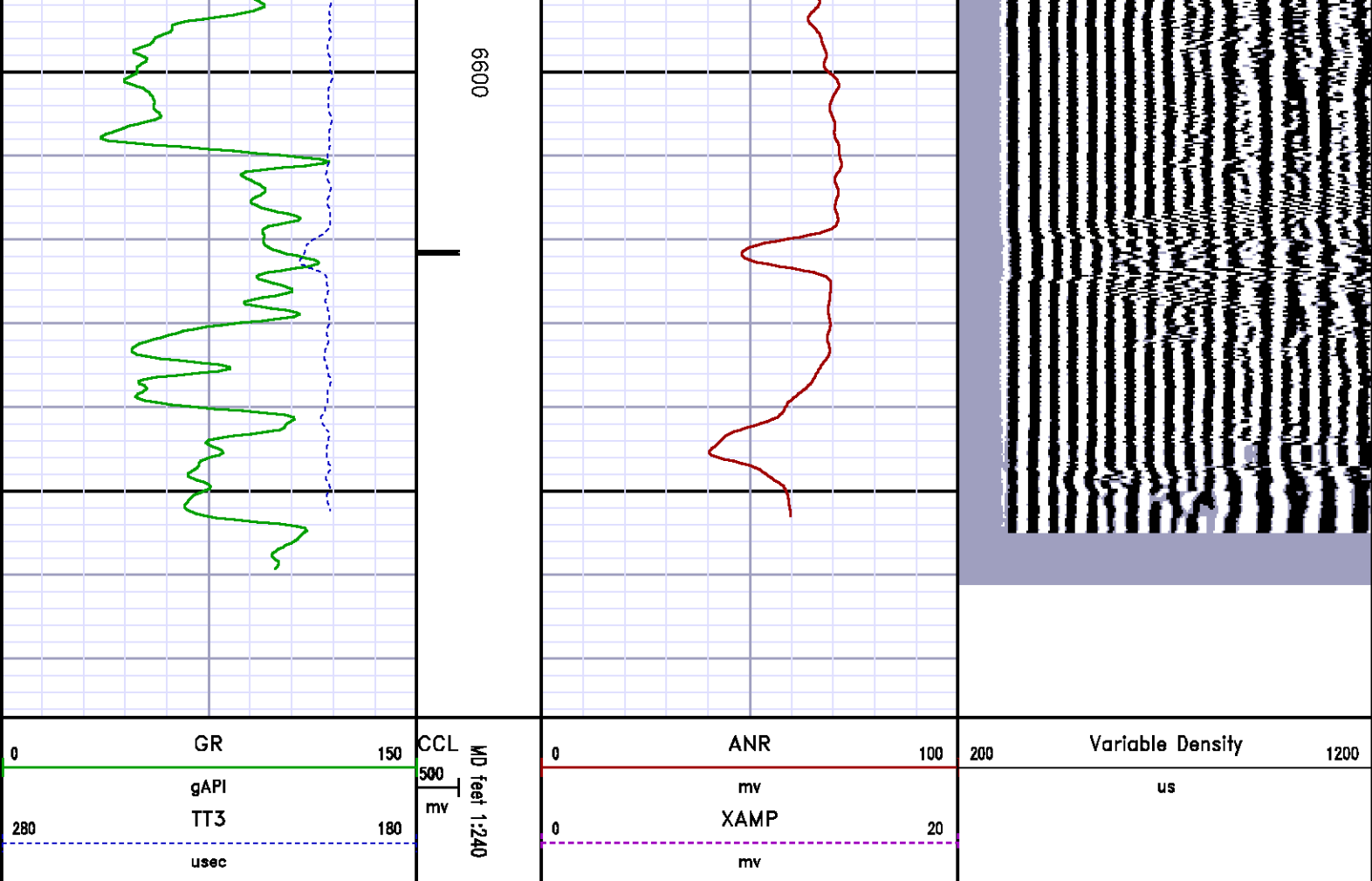
Mode : PlotMgr 5.4.504

Interval : 6224.00 - 6677.00 feet UP

Created : 11/15/2010 9:35:40 AM







***REPEAT SECTION***  
***0 PSI***

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	301.094	u sec	6367.750	6698.000
RAL	Amp Gate Start Near	195.478	u sec	6367.750	6698.000
RAL	Amp Gate Start Radial	198.048	u sec	6367.750	6698.000
RAL	Amp Gate Width Far	30.000	u sec	6367.750	6698.000
RAL	Amp Gate Width Near	30.000	u sec	6367.750	6698.000
RAL	Amp Gate Width Radial	30.000	u sec	6367.750	6698.000
RAL	casing od	4.500	inches	6367.750	6698.000
RAL	casing wt	11.600	lbm/ft	6367.750	6698.000
RAL	FB Start Far	291.900	u sec	6367.750	6698.000
RAL	FB Start Near	175.301	u sec	6367.750	6698.000

RAL	FB Start Near	175.391	usec	6367.750	6698.000
RAL	FB Thresh Far	10.000	mv	6367.750	6698.000
RAL	FB Thresh Near	4.000	mv	6367.750	6698.000
RAL	FB Thresh Radial	4.000	mv	6367.750	6698.000
RAL	Fluid Travel Time	200.000	usec/ft	6367.750	6697.800

## DEPTH OFFSETS

(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES					
1426XA	-16.450	ACAL	ANR	AR1	AR2	AR3	AR4
		AR5	AR6	AR7	AR8	CHV	FPR2
		FPR3	FPR5	TT3	TTR1	TTR2	TTR3
		TTR4	TTR5	TTR6	TTR7	TTR8	XAMP
1426XA	-15.450	AFAR	SIG	TT5			
2459XA	-11.340	CCL					
2459XA	-9.490	GR					
2459XA	-4.090	NEU					

Created by : RAL, v4.8.008

Plotted by : PlotMgr, v5.4.504

Company : WILLIAMS PRODUCTION COMPANY

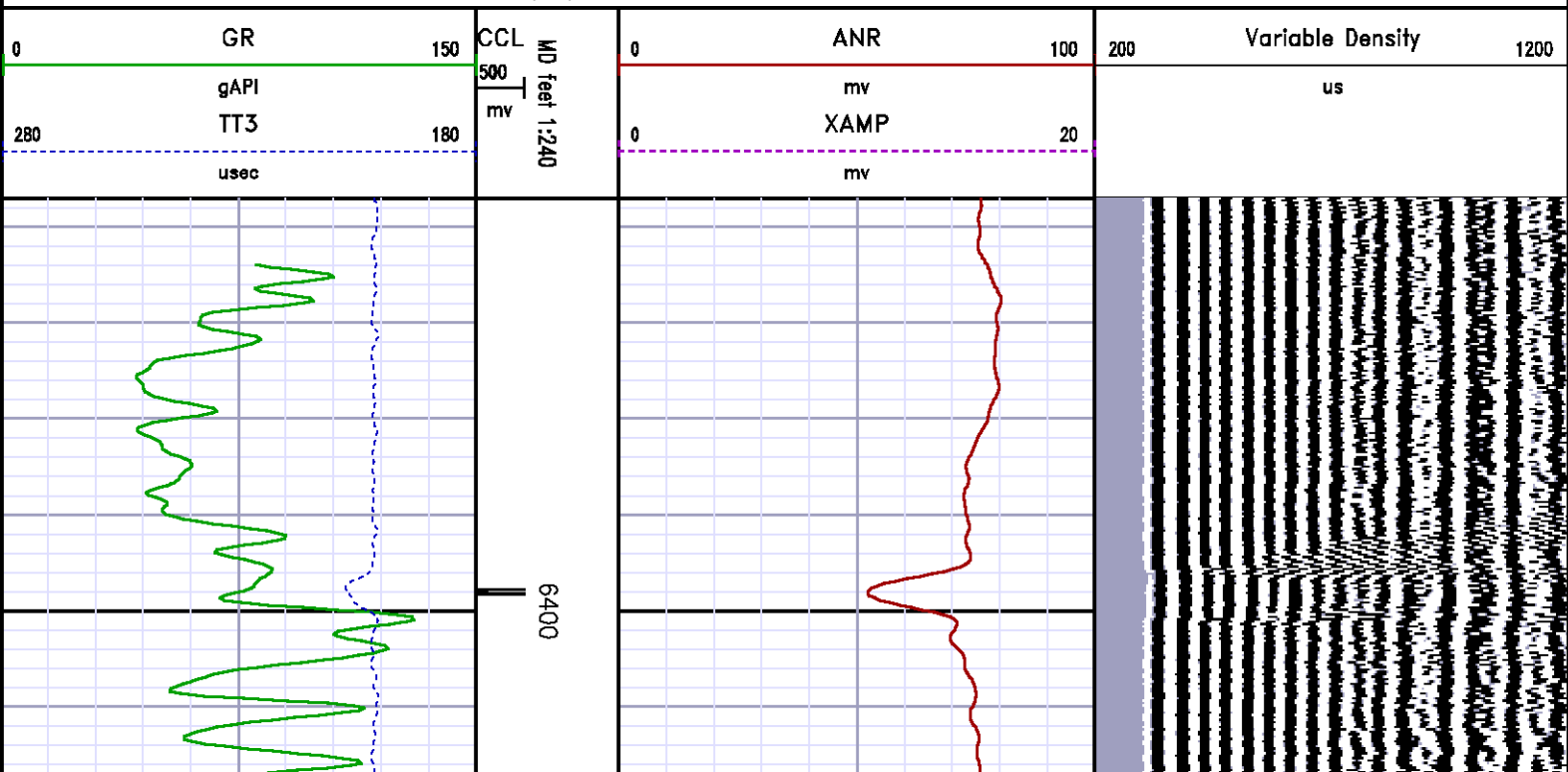
Well : GM 34-32

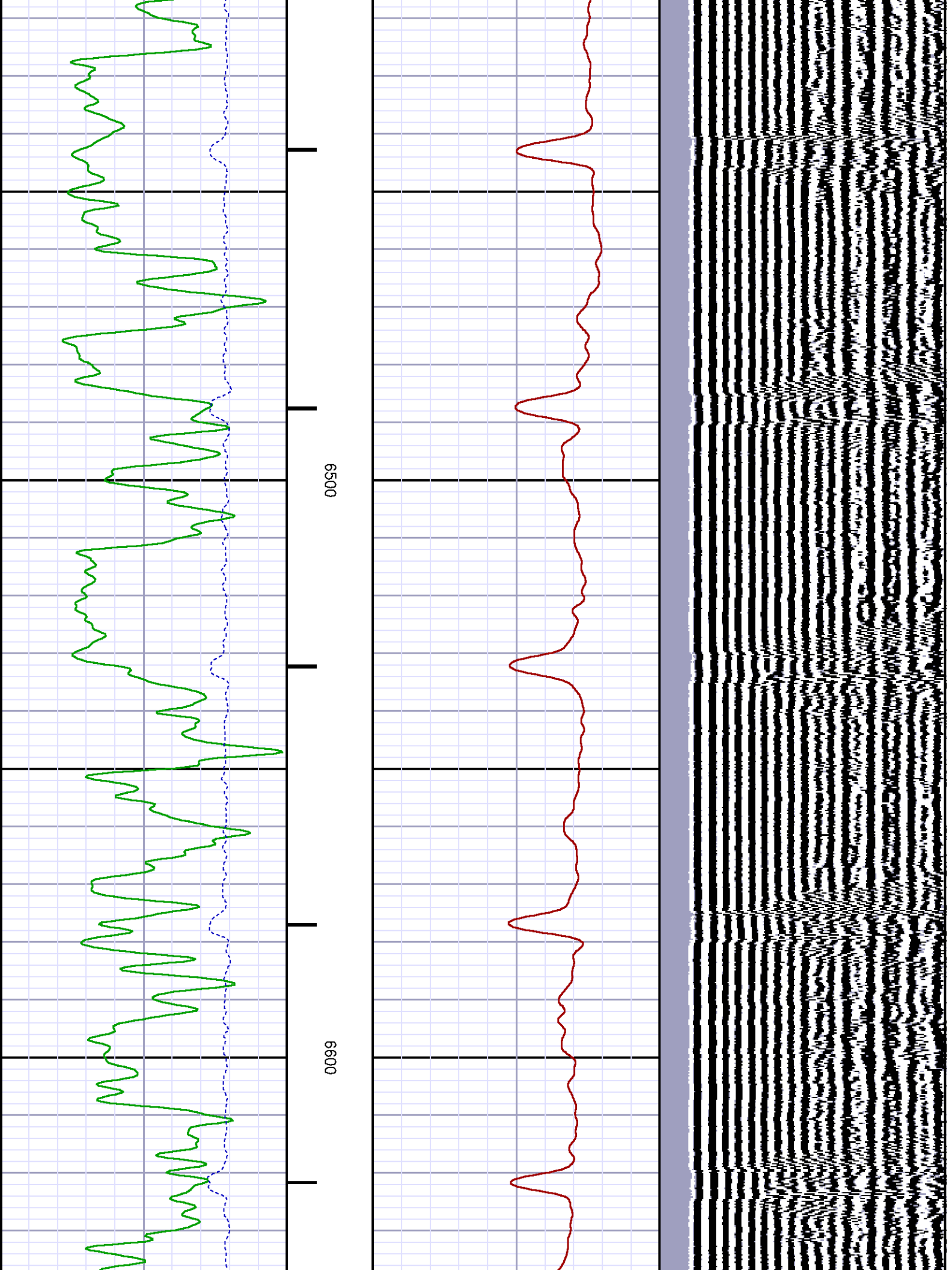
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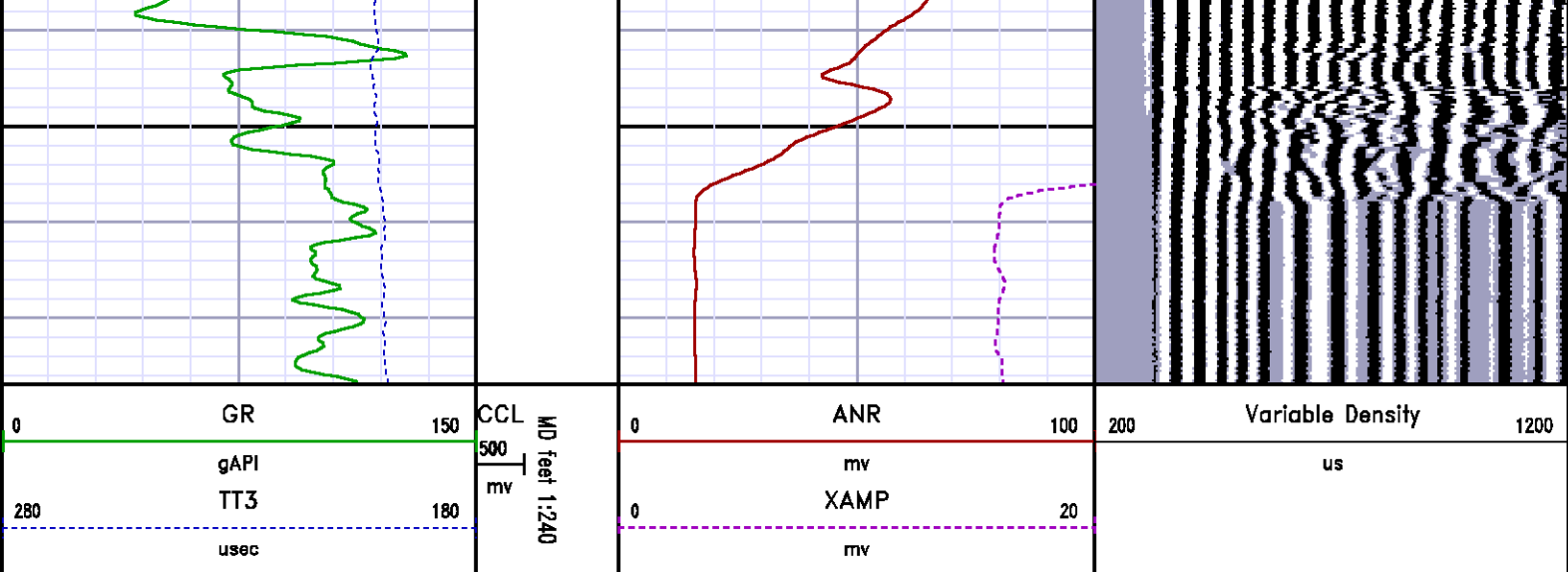
Mode : PlotMgr 5.4.504

Interval : 6357.00 - 6677.00 feet UP

Created : 11/15/2010 9:22:50 AM







## CALIBRATION SUMMARY

## GAMMA RAY #2

Calibration File: C:\case\calver\GR\028N9.cal

### CALIBRATION SUMMARY

DATE/TIME PERFORMED: Sun Nov 14 15:42:37 2010 TOOL SERIES: 2459XA ASSET: 028 SEQ: N9

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K WA-612	35.38	165.16	1.426	50.43	235.43	185.00

Verification File: C:\case\calver\GR\028N9.VP

### PRIMARY LOG VERIFICATION

DATE/TIME PERFORMED: Sun Nov 14 15:45:25 2010 TOOL SERIES: 2459XA ASSET: 028 SEQ: N9

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K WA-612	35.56	170.27	1.426	50.68	242.72	192.03

## RALSHP

Shop Calibration: C:\case\calver\RALSHP\028N14\_shp.cal

### SHOP CALIBRATION SUMMARY

DATE/TIME PERFORMED: Sun Nov 14 15:31:51 2010 TOOL SERIES: 1426XA ASSET: 028 SEQ: N14

Tool Delay [usec] -54.00 Tank OD 5.50 Tank Wt 15.50 Tank ID 4.95  
in lbm/ft

RECEIVER	Travel Time [usec]	Amp. Gate Start [usec]	Amp. Gate Width [usec]	Zero Gate Start [usec]	Zero Gate Width [usec]	Zero Amp. [mV]	Amp Ref. [mV]	Shop Factor
CAL Pulse	218	216	30	94	90	-0.023	100.00	0.26
3 Ft. Receiver	217	216	30	107	78	-0.253	100.00	0.26
5 Ft. Receiver	325	323	30	159	133	-0.504	150.00	0.28
Radial #1	217	216	30	123	64	-0.306	100.00	0.26
Radial #2	217	216	30	123	64	-0.238	100.00	0.26
Radial #3	219	216	30	123	64	-0.472	100.00	0.26
Radial #4	218	216	30	123	64	-0.349	100.00	0.26
Radial #5	217	216	30	123	64	-0.402	100.00	0.26
Radial #6	215	216	30	123	64	-0.516	100.00	0.26
Radial #7	215	216	30	123	64	-0.306	100.00	0.26
Radial #8	217	216	30	123	64	-0.397	100.00	0.26

**RALFLD**

Wellsite Calibration: C:\case\calver\RALFLD\028N14 fld.cal

WELLSITE CALIBRATION SUMMARY

DATE/TIME PERFORMED: Sun Nov 14 15:32:55 2010 TOOL SERIES: 1426XA ASSET: 028 SEQ: N14

Tool Delay [usec] -54.00 Casing OD 4.50 Casing Wt 11.60 Casing ID 4.00  
in lbm/ft

RECEIVER	Zero Gate Start [usec]	Zero Gate Width [usec]	Zero Amp. [mV]	Full Amp. [mV]	Wellsite Factor	Amp. Ref [mV]
CAL Pulse	94	90	0.004	0.000	1.00	100.000
3 Ft. Receiver	200	30	-1.734			
5 Ft. Receiver	317	30	-1.891			
Radial #1	200	30	-1.971			
Radial #2	200	30	-1.829			
Radial #3	200	30	-1.899			
Radial #4	200	30	-1.871			
Radial #5	200	30	-2.052			
Radial #6	200	30	-1.914			
Radial #7	200	30	-2.247			
Radial #8	200	30	-2.144			

**TOOL DIAGRAM**

# OTA SHORT CABLE HEAD

## PROBE 2 3/4 DUAL RECEIVER RADII

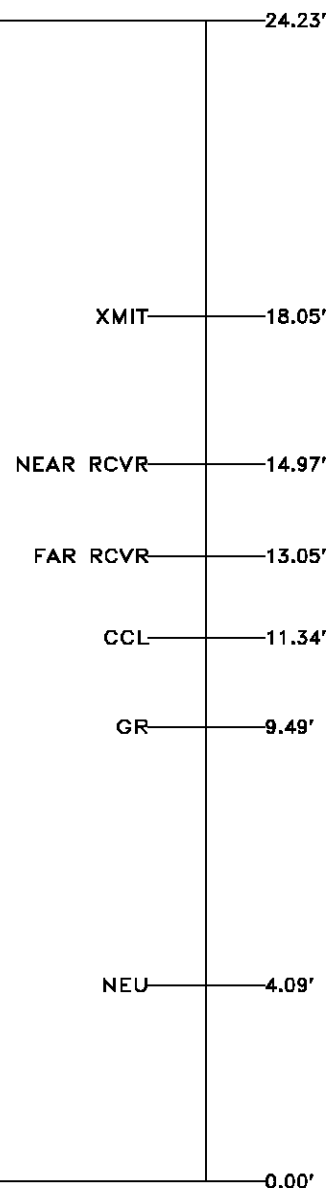
Series 1426XA  
Mnemonic PROB  
Diameter 2.75"  
Length 11.17'  
Measure Point 0.75' FAR RCVR  
Measure Point 2.67' NEAR RCVR  
Measure Point 5.75' XMIT  
Temp Rating 350.00 °F  
Press Rating 18000.00 PSI

## Probe GR/CCL/NEU

Series 2459XA  
Mnemonic PROB  
Diameter 2.75"  
Length 9.42'  
Measure Point 1.21' NEU  
Measure Point 6.60' GR  
Measure Point 8.46' CCL

## CENTRALIZER

Series RALCENT  
Mnemonic CENT  
Diameter 3.12"  
Weight 20.00 lb



Total Length: 24.23'  
Total Weight: Not Available  
Max Diameter: 0' 3.12"



Company  
Well  
Field  
County

WILLIAMS PRODUCTION COMPANY  
GM 34-32  
GRAND VALLEY  
GARFIELD State COLORADO

File No:

API No:

05045178290000

Location

SHL: 2621' FNL & 1132' FEL  
BHL: 987' FSL & 1913' FEL

Elevations

KB 5972 ft  
DF 5971 ft  
GL 5948 ft

32 6S 96W

GM 343-32 PAD

H&P 278

SEC 32 TWP 6S RGE 96W

CASE

Baker Atlas