CEMENT BOND LOG WITH GAMMA RAY

Pioneer Energy Services

Comp. CONOCO PHILLIPS CO
Well MORAN TRUST 2 #1
Field WILDCAT
Co. ARAPAHOE
State CO

Company	**CONOCO PHILLIPS CO**
Well	**MORAN TRUST 2 #1**
Field	**WILDCAT**
County	**ARAPAHOE** State **CO**

Location: API # : 05005072070000
1680' FSL & 1853' FEL NWSE
LAT 39.641706
LONG -104.516628
SEC 2 TWP 5S RGE 64W

Other Services
NONE

Permanent Datum	GL	Elevation 5975'		Elevation
Log Measured From	KB	24' Above Perm. Datum	K.B.	5999'
Drilling Measured From	KB		D.F.	N/A
			G.L.	5975'

Date of Service	NOVEMBER 4, 2016
Run Number	ONE
Depth Driller or PBTD	8030'
Depth Logger	7787'
Bottom Log Interval	7785'
Top Log Interval	6500'
Open Hole Size	8.75"
Type Fluid	N/A
Fluid Level	SURFACE
Fluid Density	N/A
Max. Recorded Temperature	214 F
Max. Wellhead Pressure	2000 PSI
Wellhead Connection	7-1/16" FLANGE
Estimated Cement Top	N/A
Unit Number	P112
Wireline Size	5/16"
Location	FT MORGAN, CO
Recorded By	SCHUMAN
Witnessed By	MR C CAMERON

	Size	Wt/Ft	Top	Bottom
Tubing Record				
Surface Casing	9.625"	36#	SURFACE	N/A
Production Casing	7"	32#	SURFACE	N/A
Liner Record				

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not 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.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.
CORRELATED TO CBL DATED 9-24-2013
SO# 2-280321

THANK YOU FOR USING PIONEER ENERGY SERVICES!

Your Pioneer Energy Services Crew
Engineer: SCHUMAN
Operator: GARCIA
Operator: ANDERSON
Operator:

Tool Data - Services	Serial Number
SCBL	121041
GR	120672

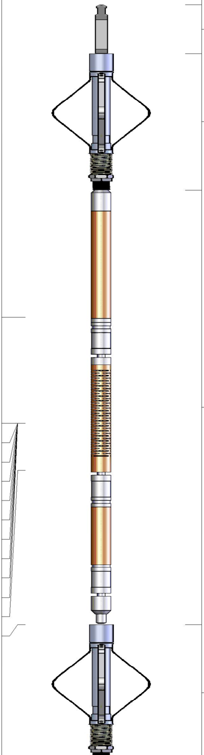
Log Variables

Database C:\ProgramData\Warrior\Data\moran trust 2-1_rbl.db
Dataset field/well/RBL/pass3/_vars_

Top - Bottom

BHTEMP_Src	PPT	CASEWGHT	MAXAMPL	MINAMPL	MINATTN	SRFTEMP
	usec	lb/ft	mV	mV	db/ft	degF
TEMP	0	32	0	3.3	0.08	0

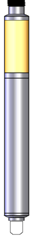
CASETHCK	CASEOD	PERFS	TDEPTH	BOTTEMP	BOREID
in	in		ft	degF	in
0	7	0	0	100	8.75



Description	Length (ft)	O.D. (in)	Weight (lb
Cable Head-Titan 143 1 7/16" Titan Cable Head (1" Fish Top)	1.03	1.43	2.00
Centralizer-275 Probe 2 3/4" Probe Adjustable Spring Centralizer	2.88	2.75	15.00
SCBL-275 Probe w Temp New Mod (FW1:9.1741) Probe Radii Bond Tool with Temperature		2.75	95.00
Centralizer-275 Probe 2 3/4" Probe Adjustable Spring Centralizer	2.88	2.75	15.00

Sensor	Offset (ft)
TEMP	14.17
WVFS8	11.94
WVFS7	11.94
WVFS6	11.94
WVFS5	11.94
WVFS4	11.94
WVFS3	11.94
WVFS2	11.94
WVFS1	11.94
WVFCAL	11.94
WVF3FT	11.94
WVF5FT	10.94
HEADVOLT	7.69

CCL	3.91		
GR	1.17		



GR_CCL-275 Probe GR-CCL (1206-72) Probe 2 3/4" Gamma Ray / CCL Analog - Neg Pulse	4.54	2.75	60.00
Bullnose-Titan GO Pin Pressure Cap	0.27	1.38	1.00

Dataset: moran trust 2-1_rbl.db: field/well/RBL/pass3
Total length: 20.76 ft
Total weight: 188.00 lb
O.D.: 2.75 in

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FREE PIPE SECTION

ZERO PSI APPLIED AT SURFACE

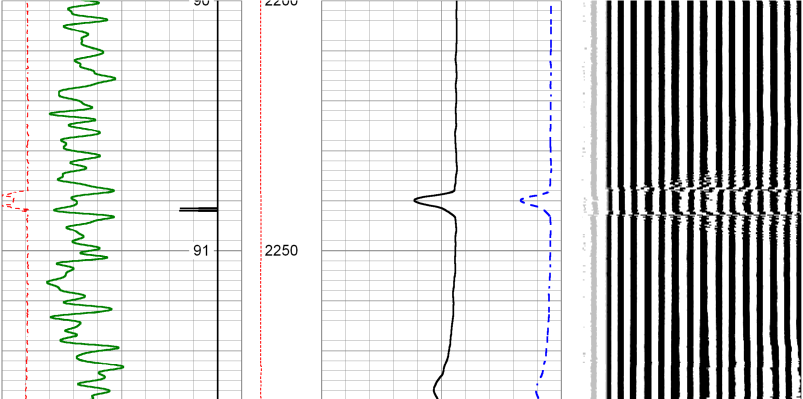
Database File	conoco.db
Dataset Pathname	pass4
Presentation Format	pnr_cbl2
Dataset Creation	Fri Nov 04 10:02:34 2016
Charted by	Depth in Feet scaled 1:240

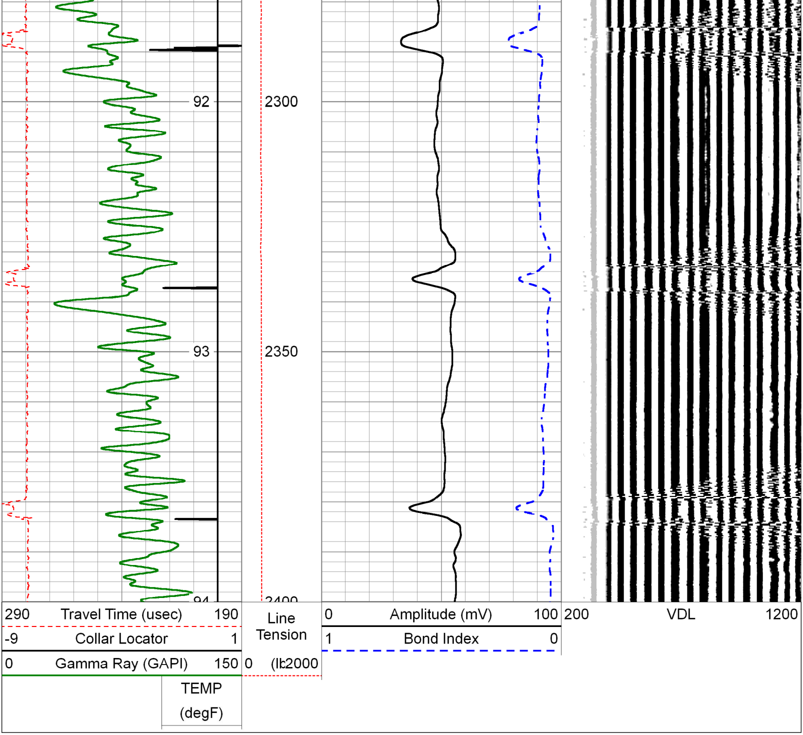
290 Travel Time (usec) 190
-9 Collar Locator 1
0 Gamma Ray (GAPI) 150
TEMP (degF)

Line Tension
0 (lb2000

0 Amplitude (mV) 100
1 Bond Index 0

200 VDL 1200





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MAIN LOG

2000 PSI APPLIED AT SURFACE

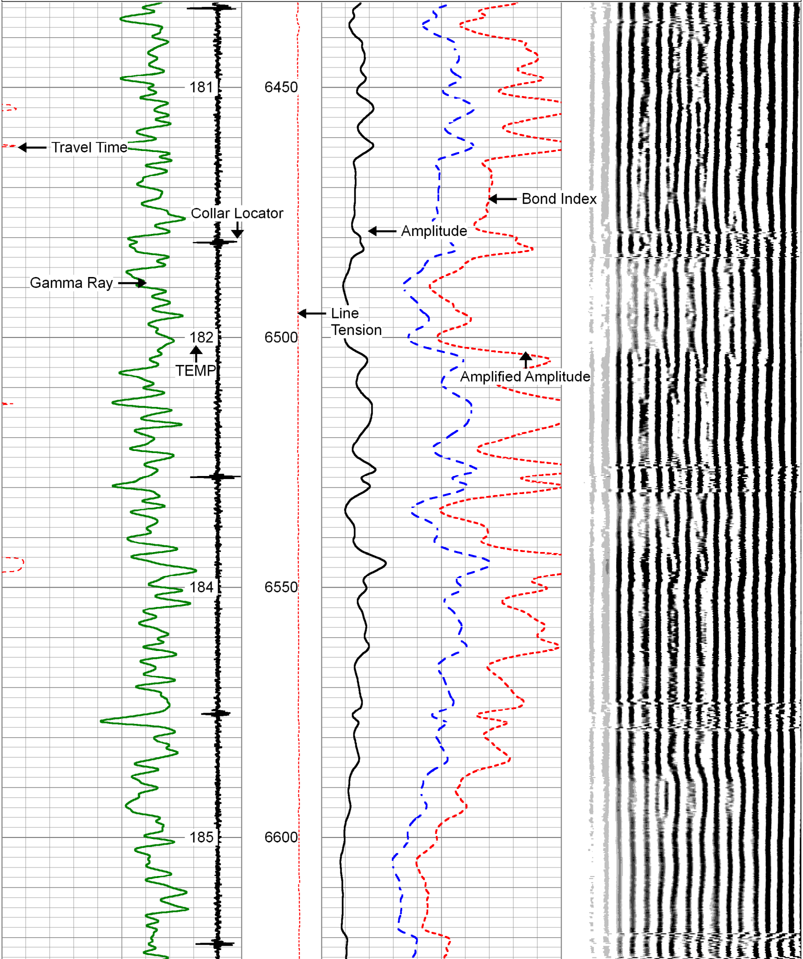
Database File	moran trust 2-1_rbl.db
Dataset Pathname	RBL/pass3
Presentation Format	pnr_cbl2
Dataset Creation	Fri Nov 04 11:05:29 2016
Charted by	Depth in Feet scaled 1:240

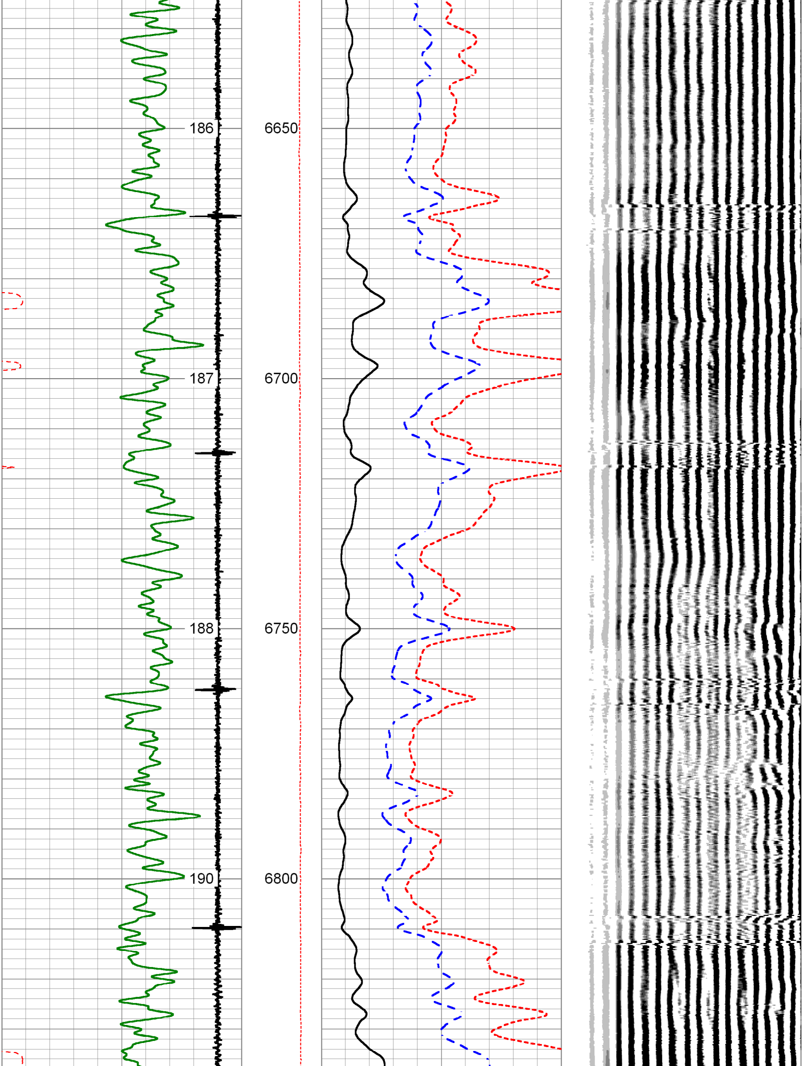
290 Travel Time (usec) 190
-9 Collar Locator 1
0 Gamma Ray (GAPI) 150
TEMP
(degF)

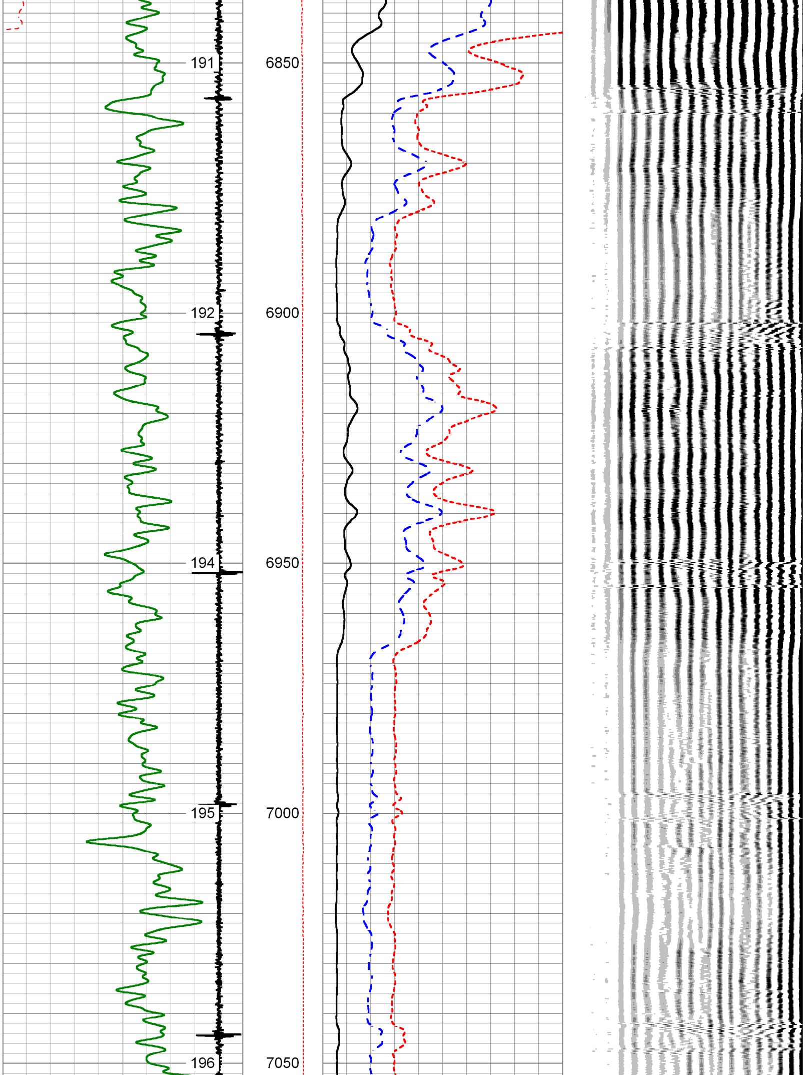
Line
Tension
0 (lb 2000

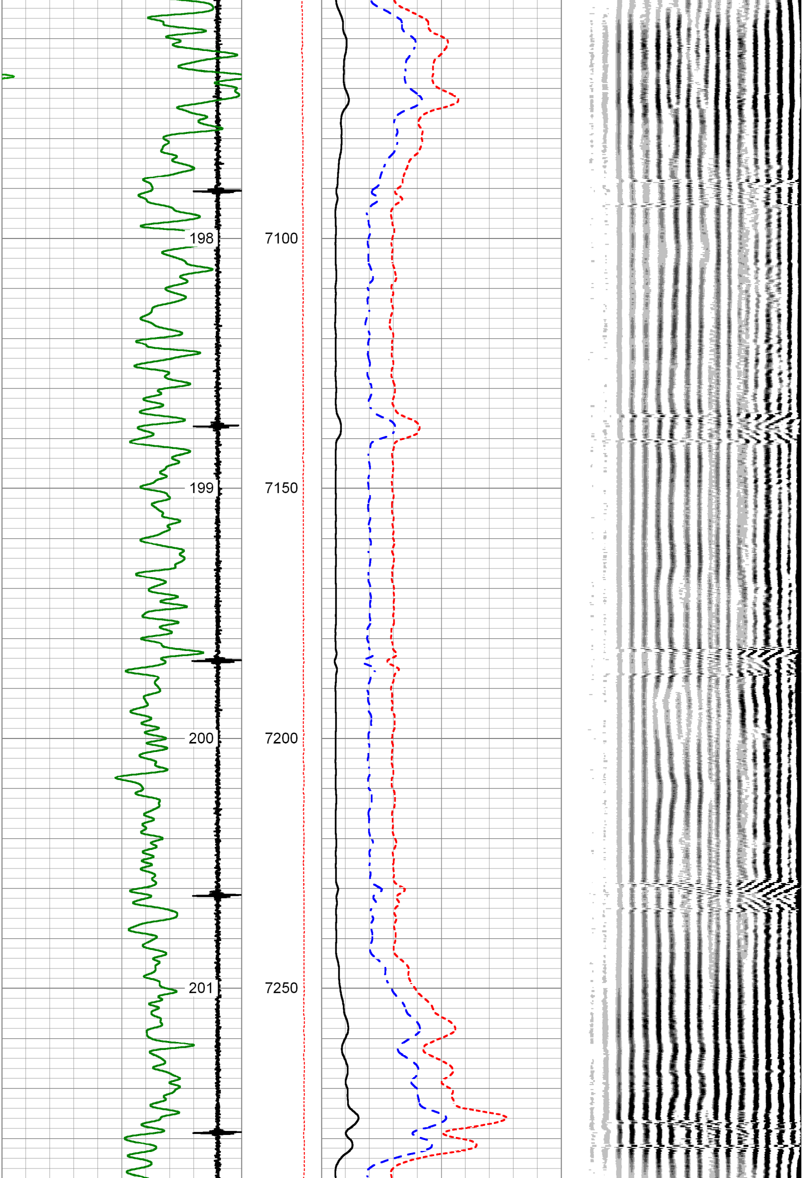
0 Amplitude (mV) 100
1 Bond Index 0

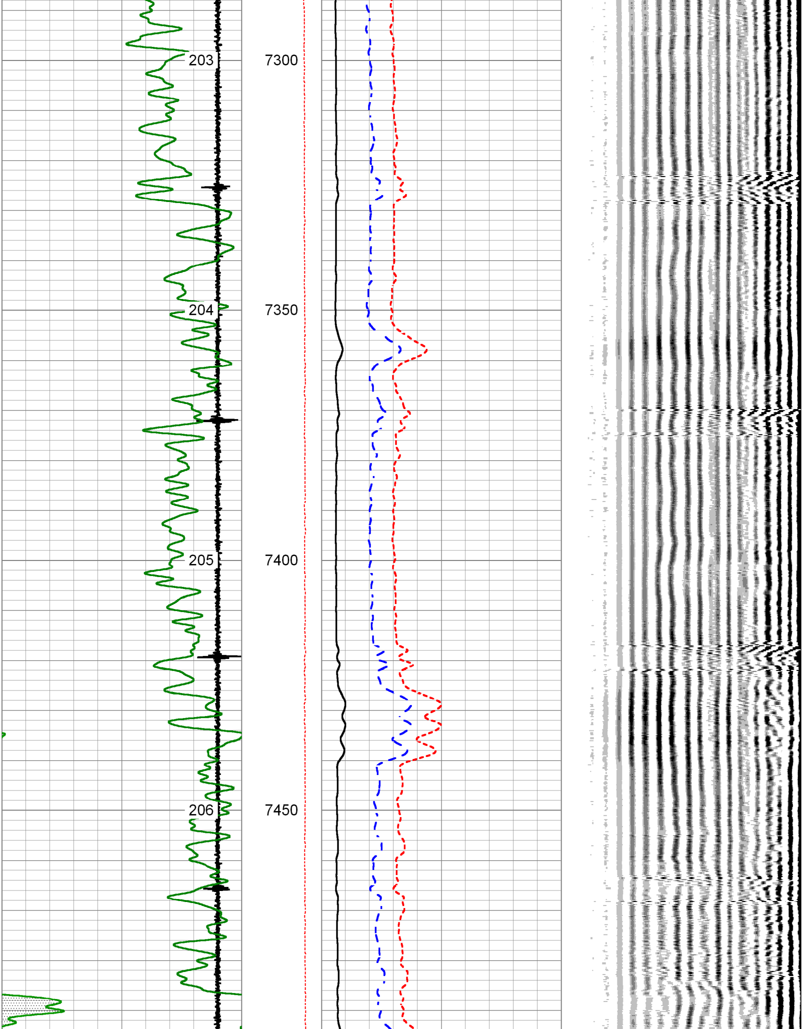
200 VDL 1200

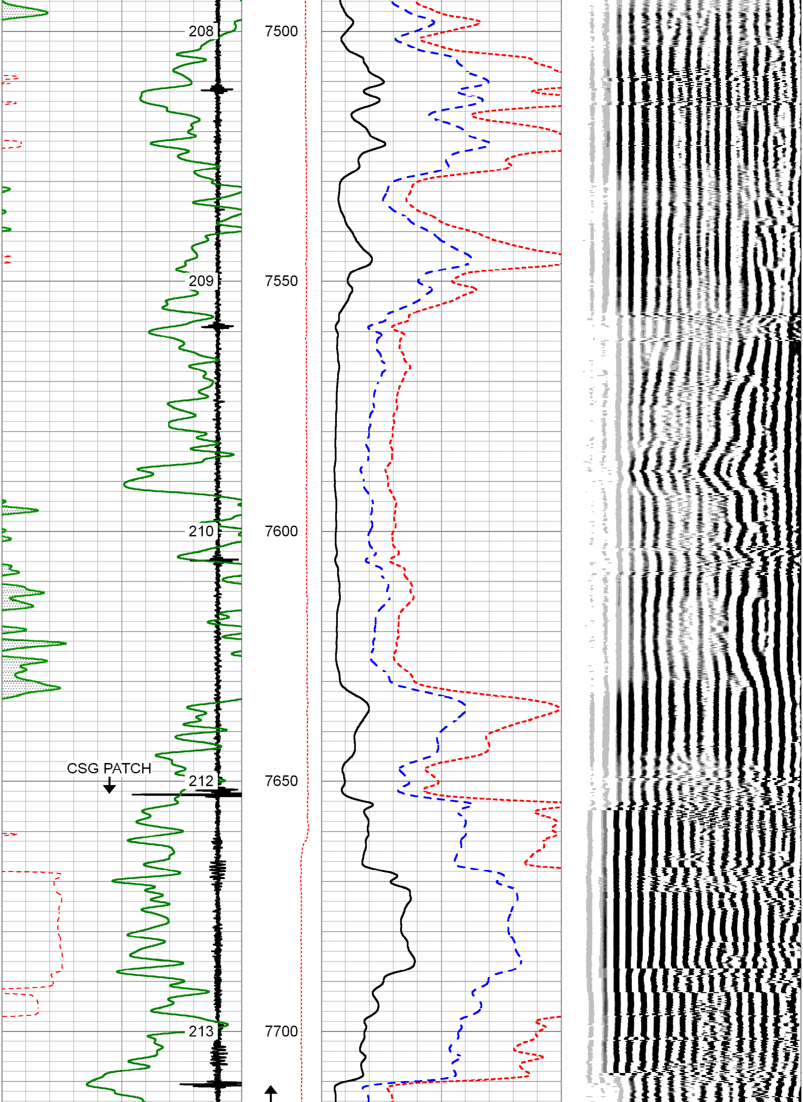


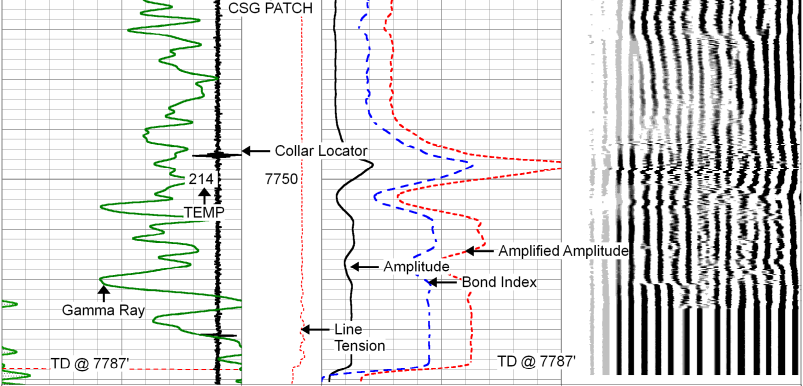












290 Travel Time (usec) 190
-9 Collar Locator 1
0 Gamma Ray (GAPI) 150
TEMP (degF)
Line Tension
0 (lb 2000
0 Amplitude (mV) 100
1 Bond Index 0
200 VDL 1200

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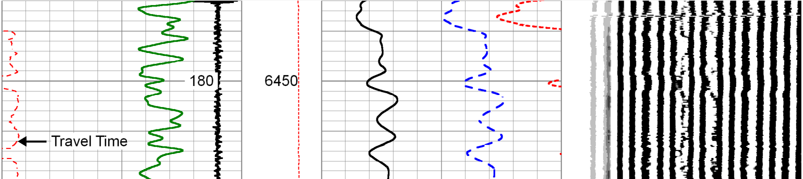
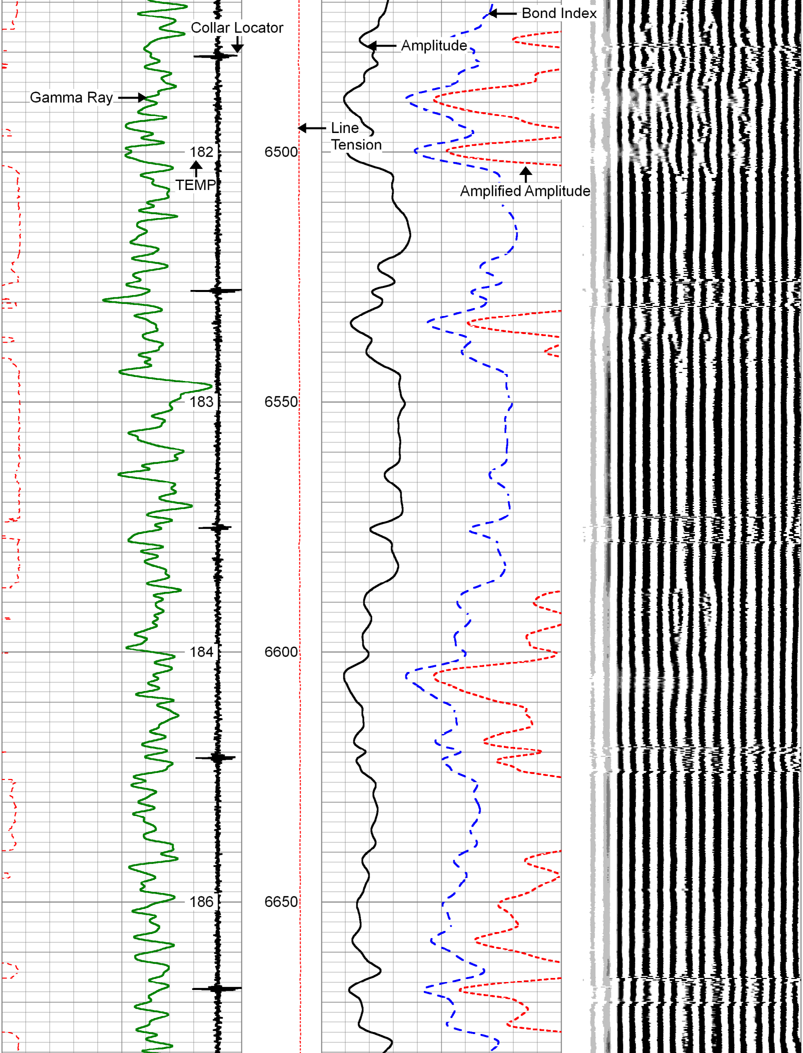
MAIN LOG

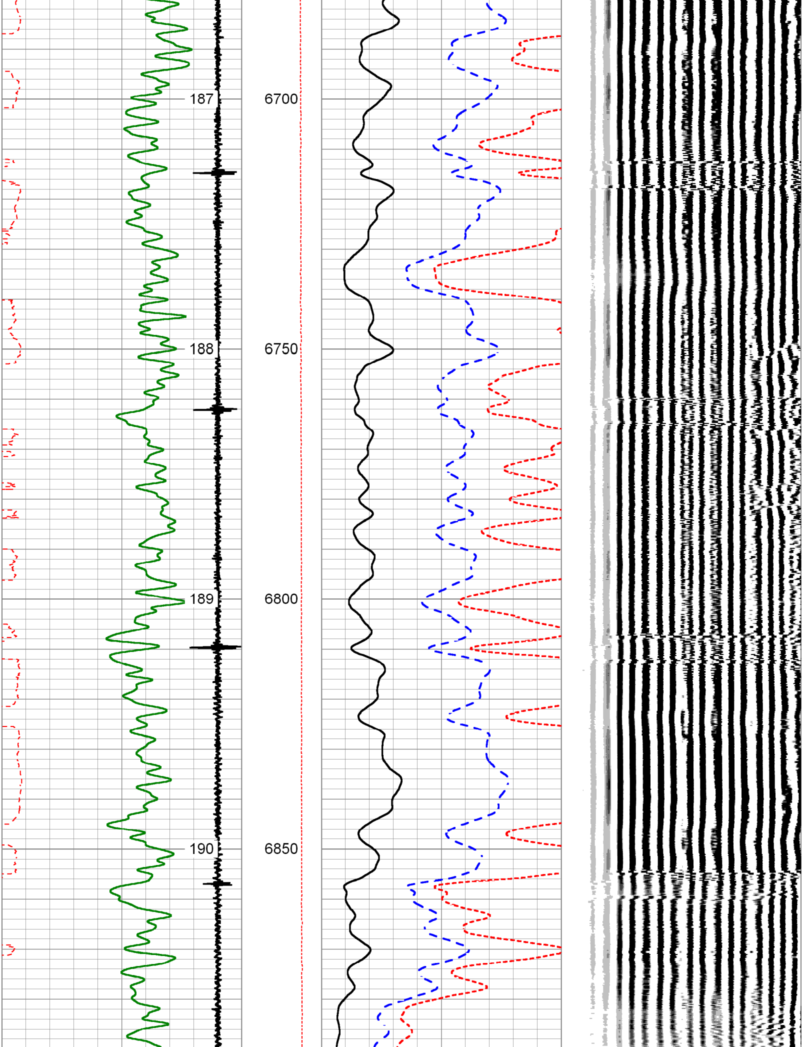
ZERO PSI APPLIED AT SURFACE

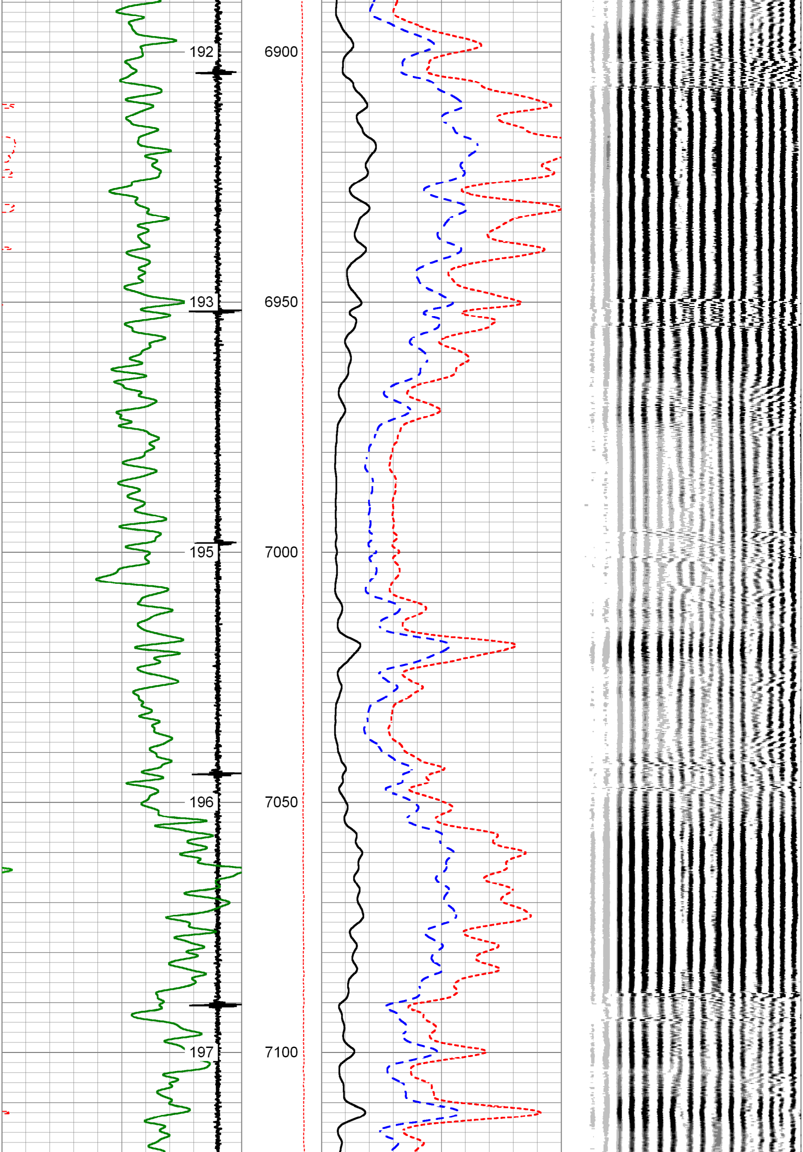
Database File	moran trust 2-1_rbl.db
Dataset Pathname	RBL/pass2
Presentation Format	pnr_cbl2
Dataset Creation	Fri Nov 04 10:39:04 2016
Charted by	Depth in Feet scaled 1:240

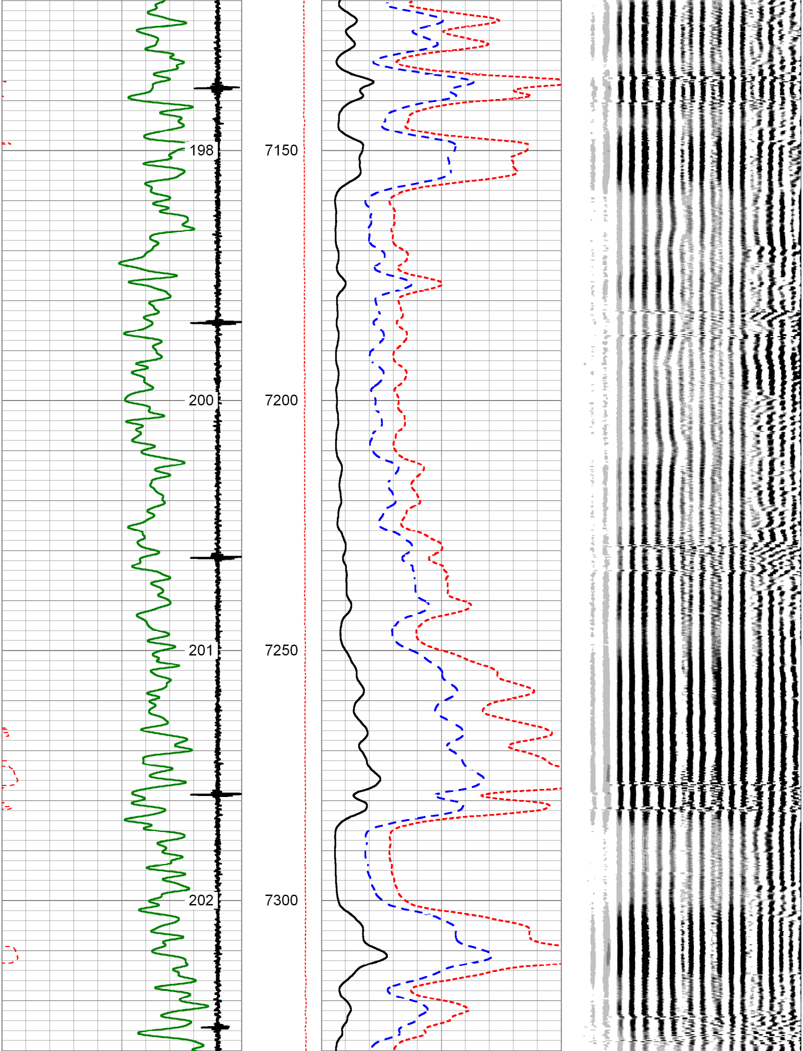
290 Travel Time (usec) 190
-9 Collar Locator 1
0 Gamma Ray (GAPI) 150
TEMP (degF)
Line Tension
0 (lb 2000
0 Amplitude (mV) 100
1 Bond Index 0
200 VDL 1200

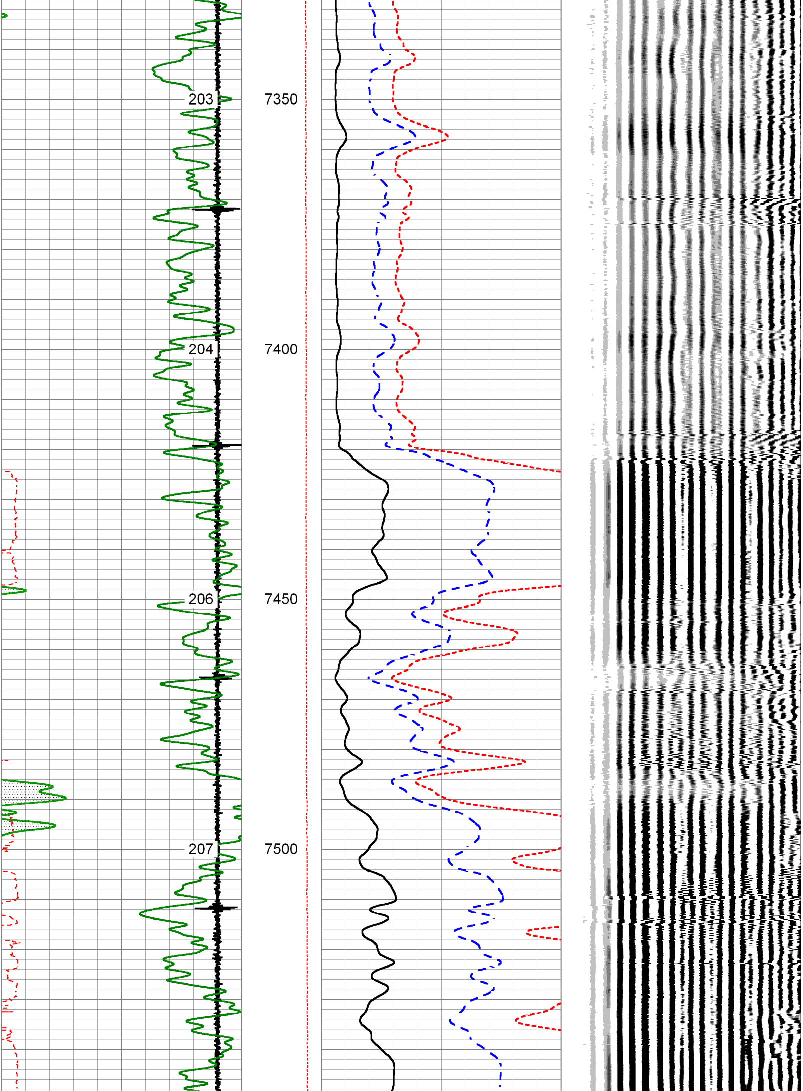


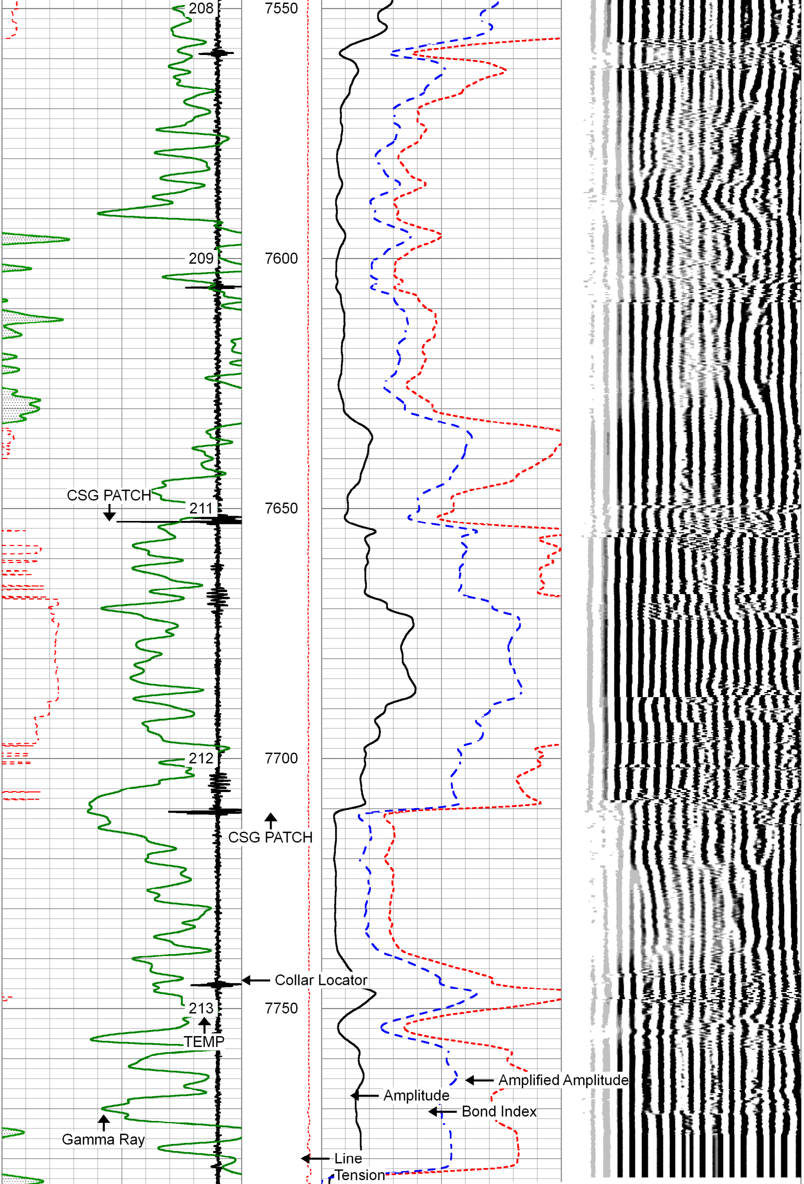


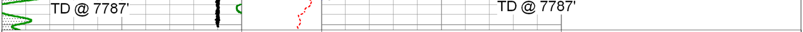












290 Travel Time (usec) 190 -9 Collar Locator 1 0 Gamma Ray (GAPI) 150	Line Tension 0 (lb 2000	0 Amplitude (mV) 100 1 Bond Index 0	200 VDL 1200
TEMP (degF)			

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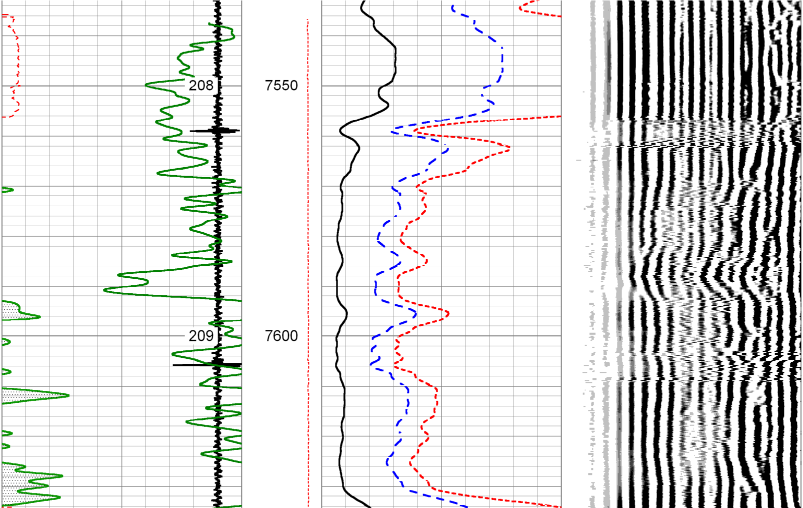
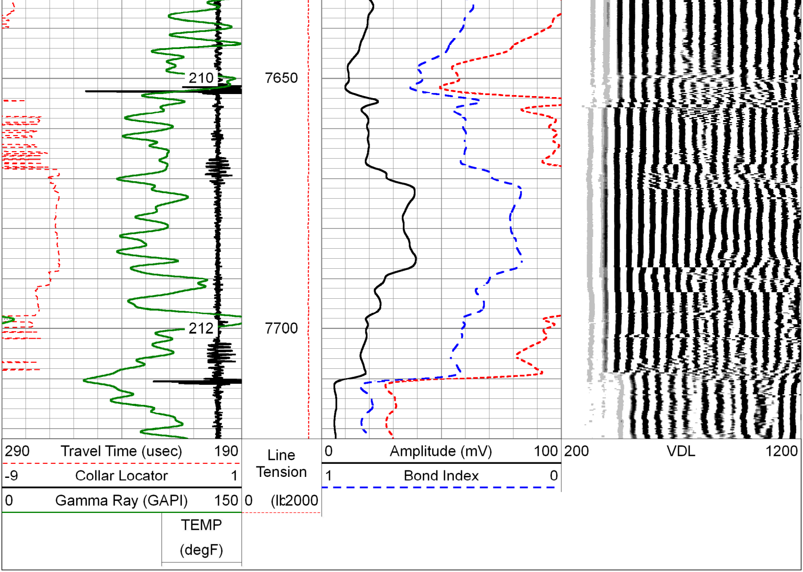
REPEAT SECTION

ZERO PSI APPLIED AT SURFACE

Database File	moran trust 2-1_rbl.db
Dataset Pathname	RBL/pass1
Presentation Format	pnr_cbl2
Dataset Creation	Fri Nov 04 10:31:21 2016
Charted by	Depth in Feet scaled 1:240

290 Travel Time (usec) 190 -9 Collar Locator 1 0 Gamma Ray (GAPI) 150	Line Tension 0 (lb 2000	0 Amplitude (mV) 100 1 Bond Index 0	200 VDL 1200
TEMP (degF)			





Calibration Report

Database File	moran trust 2-1_rbl.db
Dataset Pathname	RBL/pass1

Dataset Pathname	RBL/pass1
Dataset Creation	Fri Nov 04 10:31:21 2016

Gamma Ray Calibration Report

Serial Number:	1206-72	
Tool Model:	275 Probe GR-CCL	
Performed:	Thu Nov 03 07:47:59 2016	
Calibrator Value:	320.0	GAPI
Background Reading:	0.2	cps
Calibrator Reading:	1.6	cps
Sensitivity:	0.9500	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	FW1210-41	
Tool Model:	275 Probe w Temp New Mod	
Calibration Casing Diameter:	7.000	in
Calibration Depth:	1531.750	ft

Master Calibration, performed Fri Nov 04 10:02:03 2016:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.000	1.825	3.300	62.165	28.860	3.304
CAL	-0.002	1.769				
5'	-0.002	1.750	3.300	62.165	33.607	3.356
SUM						
S1	-0.005	1.802	0.000	100.000	55.349	0.278
S2	0.003	1.806	0.000	100.000	55.456	-0.144
S3	0.002	1.825	0.000	100.000	54.855	-0.115
S4	0.002	1.803	0.000	100.000	55.505	-0.100
S5	0.001	1.817	0.000	100.000	55.062	-0.075
S6	0.001	1.822	0.000	100.000	54.890	-0.028
S7	-0.000	1.826	0.000	100.000	54.776	0.001
S8	-0.001	1.804	0.000	100.000	55.423	0.037

Temperature Calibration Report

Serial Number:	FW1210-41
Tool Model:	275 Probe w Temp New Mod
Performed:	Wed Nov 02 13:10:48 2016

	Reference	Reading
Low Reference:	35.00 degF	0.37 degF
High Reference:	210.00 degF	1.81 degF

Gain:	0.78
Offset:	8.50
Delta Spacing	1

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Company	CONOCO PHILLIPS CO
Well	MORAN TRUST 2 #1
Field	WILDCAT
County	ARAPAHOE
State	CO