HALLIBURTON

ACOUSTIC CEMENT BOND LOG

Company KINDER MORGAN C02 Co. L.P.
Well HB # 6
Field MCELMO
County MONTEZUMA State CO

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API No.: 05-083-06699 Serv #: 900362040
Location: SURFACE HOLE LOCATION
1138' FNL & 2443' FEL
Other Services
GAUGE RING
CAST-M
Sec: 36 Twp: 38N Rge: 19W
Permanent Datum GROUND LEVEL Elevation 6317'
Log Measured From KB , 25 Ft. above perm. datum
Drilling Measured From KB
Elevation
K.B. 6342
D.F. 6342
G.L. 6317

Date @ Time Logged	07:00 14-APR-2013	Type Fluid in Hole	FRESH WATER
Run No.	ONE	Density of Fluid	8.33
Depth - Driller	8085	Fluid Level	SURFACE
Depth - Logger	7840	Cement Top Est. Logged	SEE LOG
Bottom - Logged Interval	7820	Equipment / Location	11875120 / GJ
Top - Log Interval	SURFACE	Recorded by	W. GLIDEWELL
Max. Recorded Temp.	179 DEGF	Witnessed by	C. HESSER

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	12.25	SURFACE	3486'	9.625	36#	SURFACE	3486'
TWO	8.75	SURFACE	8195'	7	29# & 32#	SURFACE	8195'

<<< Fold Here >>>

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

GAMMA RAY - CBL - CAST RAN IN COMBINATION

GAMMA BLANKET VALUE: 257 GAPI

LOG INTERVALS PER CUSTOMER REQUEST

CAST RAN AS FOLLOWS: 4-3/8" HEAD, BROWN TRANSDUCER, CIM MODE, 72 SHOTS, 4 SCANS PER FOOT

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES!!!

Service Ticket No. 900362040 API No. 05-083-06699 PGM Ver 111027_R5

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

EQUIPMENT DATA

TELEMETRY		CEMENT BOND TOOL		CAST			
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	
Serial No.	1009834	Serial No.	110928	Serial No.	11922569_438	Serial No.	
Model No.	TTTCU-002	Model No.	CBL-M	Model No.	CAST-M	Model No.	
Diameter	1.688	Diameter	2.75	Diameter	3.125	Diameter	

LOGGING DATA

General Data

Pass No.	Depths From	Depths To	Well Head Pressure	Speed Ft/Min	Logging Run Comments
ONE	7820	SURFACE	0	40	MAIN LOG SECTION

Pass	GAMMA RAY Scale		OVALITY Scale		ECEN Scale		IMPEDANCE Scale	
No.	L	R	L	R	L	R	L	L
ONE	0	150	0	.25	0	.25	0	6.15

DIRECTIONAL INFORMATION

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

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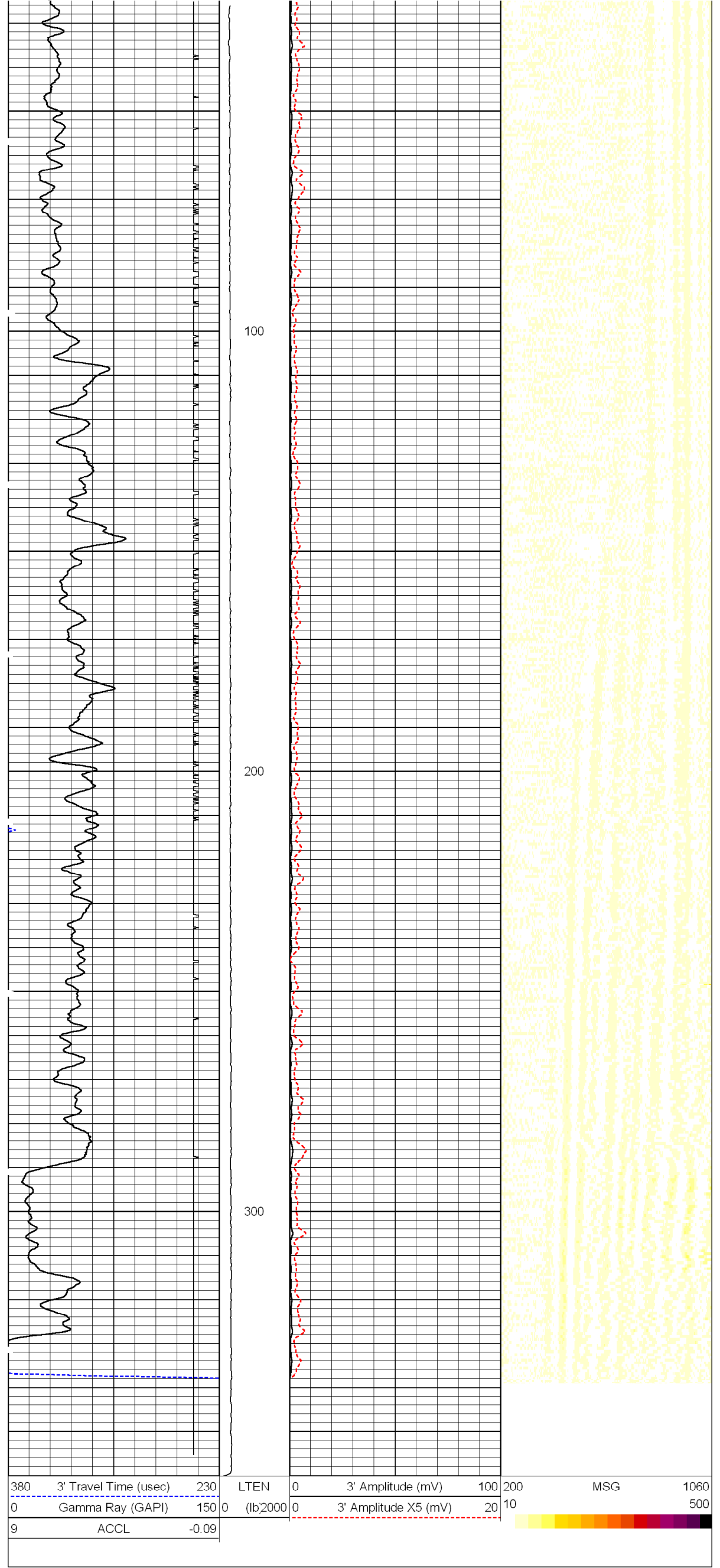
MAIN LOG SECTION

5" = 100'

Database File: hb6.db
Dataset Pathname: MAIN8
Presentation Format: hcbl
Dataset Creation: Sun Apr 14 18:31:07 2013 by Log Halliburton Casedho
Charted by: Depth in Feet scaled 1:240



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MAIN LOG SECTION

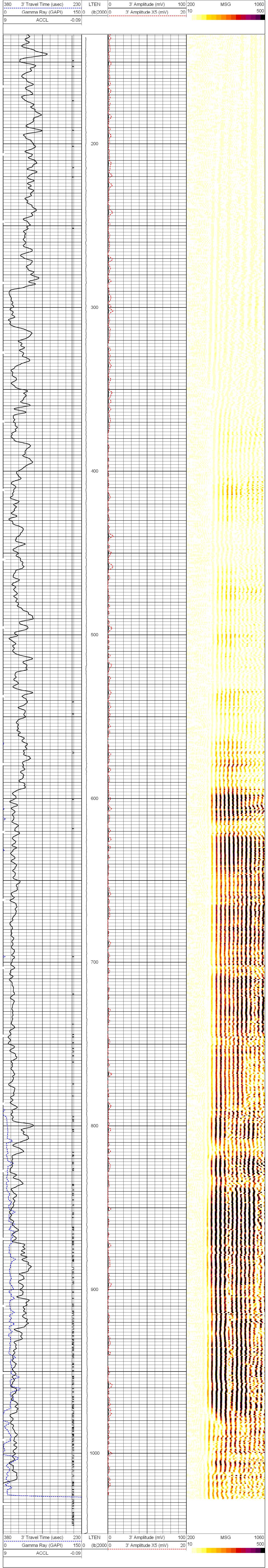
5" = 100'

HALLIBURTON

MAIN LOG SECTION

5" = 100'

Database File: hb6.db
Dataset Pathname: MAIN7
Presentation Format: hcbl
Dataset Creation: Sun Apr 14 17:55:34 2013 by Log Halliburton Casedho
Charted by: Depth in Feet scaled 1:240



HALLIBURTON

MAIN LOG SECTION

5" = 100'

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MAIN LOG SECTION

5" = 100'

Database File: goodmanpoint21.db
Dataset Pathname: MAIN6
Presentation Format: hcbl
Dataset Creation: Sun Apr 14 15:59:30 2013 by Log Halliburton Casedho
Charted by: Depth in Feet scaled 1:240

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MAIN LOG SECTION

5" = 100'

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MAIN LOG SECTION

5" = 100'

Database File: goodmanpoint21.db
Dataset Pathname: MAIN
Presentation Format: hcbl
Dataset Creation: Sun Apr 14 07:35:22 2013 by Log Halliburton Casedho
Charted by: Depth in Feet scaled 1:240

380	3' Travel Time (usec)	230	LTEN	0	3' Amplitude (mV)	100	200	MSG	1160
0	Gamma Ray (GAPI)	150	0 (lb) 2000	0	3' Amplitude X5 (mV)	20	10		500
9	ACCL	-0.09							

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MAIN LOG SECTION

5" = 100'

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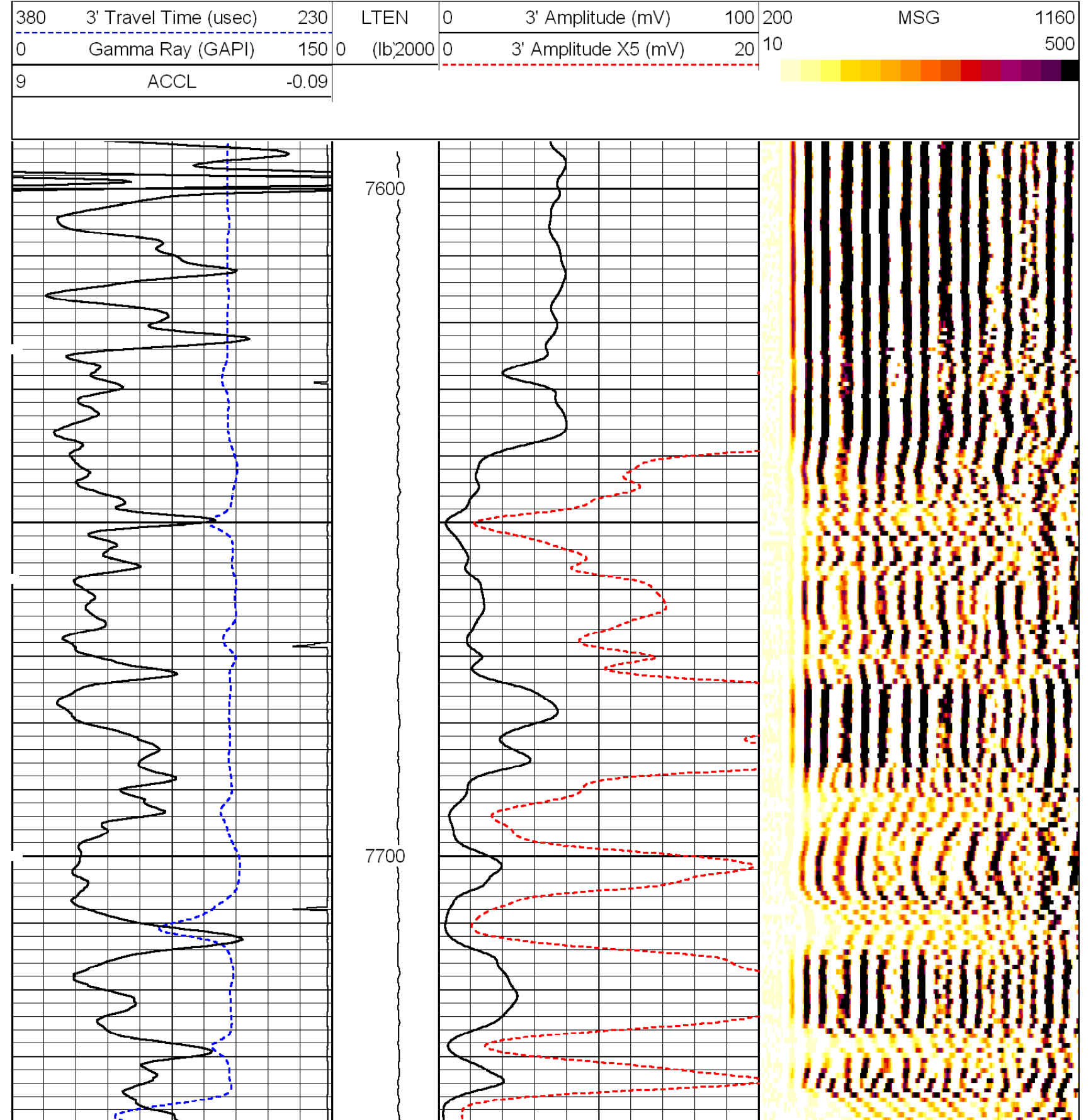
REPEAT PASS

5" = 100'

Database File: goodmanpoint21.db
Dataset Pathname: REPEAT
Presentation Format: hcbl
Dataset Creation: Sun Apr 14 07:15:05 2013 by Log Halliburton Casedho
Charted by: Depth in Feet scaled 1:240

380	3' Travel Time (usec)	230	LTEN	0	3' Amplitude (mV)	100	200	MSG	1160
0	Gamma Ray (GAPI)	150	0 (lb) 2000	0	3' Amplitude X5 (mV)	20	10		500
9	ACCL	-0.09							



380	3' Travel Time (usec)	230	LTEN	0	3' Amplitude (mV)	100	200	MSG	1160
0	Gamma Ray (GAPI)	150	0 (lb) 2000	0	3' Amplitude X5 (mV)	20	10		500
9	ACCL	-0.09							

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REPEAT PASS

5" = 100'

Calibration Report

Database File: goodmanpoint21.db
Dataset Pathname: MAIN5
Dataset Creation: Sun Apr 14 15:28:17 2013 by Log Halliburton Casedho

Circumferential Acoustic Scanning Tool Shop Calibration Report

Serial-Model: 11922569_438-4 3/8 SCAN

Calibration Performed: Sat Apr 13 22:21:59 2013

	Mudcell Transducer		Main Transducer		
	Measured	Expected	Measured	Expected	Units
W/O Calibrator	50.00	44.00	N/A	N/A	usec
W Calibrator	41.60	35.00	56.21	50.00	usec

Calibrated Offsets

Name	Value	Units
TCAL	6.2098	usec
MCAL	7.9988	usec

XY Accelerometers Calibration Report

Performed: Not Performed

	Low Read.	High Read.		Low Ref.	High Ref.	
X Accelerometer	0.000	1.000	gee	0.000	1.000	gee
Y Accelerometer	0.000	1.000	gee	0.000	1.000	gee

Cement Bond Log Shop Calibration Report

Serial-Model: 110928-A

Calibration Performed: Sun Apr 14 06:02:39 2013

Free Pipe Calibration

	Measured	Units
TT	0.0	usec
Amplitude	634.2	mV
Log Base Line	7.4	mV

Calibration References and Gain

Name	Value	Units
Pipe O.D.	0.000	in
Pipe Weight	0.0	lb/ft
Pipe Ref. Amp.	62.0	mV
Amp. Gain	0.099	

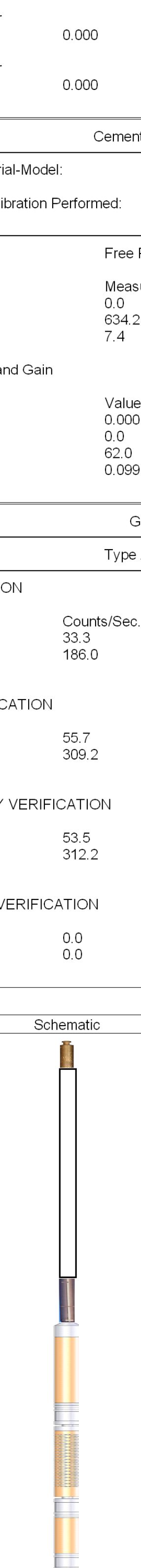
Gamma Ray Calibration Report

Type / Serial: 002 / 10009834

	Counts/Sec.	Gain	Offset	Jig	Units
SHOP CALIBRATION	Sat Apr 13 22:27:38 2013				
Background	33.3				cps
Calibrator	186.0				cps
		1.6826			GAPI/cps
PRIMARY VERIFICATION	Sat Apr 13 22:30:39 2013				
Background	55.7				cps
Calibrator	309.2				cps
Difference				253.5	GAPI
BEFORE SURVEY VERIFICATION	Sat Apr 13 22:33:19 2013				
Background	53.5				cps
Calibrator	312.2				cps
Difference				258.7	GAPI
AFTER SURVEY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

Sensor	Offset (ft)
WVF5FT	21.04
WVF3FT	17.52
CblTStat	17.52
CblSeqNum	17.52
CblITemp	17.52
CblIVolt	17.52
CblCStat	17.52
CblLWvCnt	17.52
CblAGate	17.52
CblTTThresh	17.52
CblBLine	17.52
CblCAmp	17.52
CblCCsgOD	17.52
CblCCsgWgt	17.52
CblCTT	17.52
TLINITCNT	17.52
TLINITCNT	17.52
MCWV	4.54
LLMTEN	0.00
LOCTIM	0.00
SCAN	0.00
LWV	0.00
TStat	0.00
AccX1	0.00
AccY1	0.00
Ps0	0.00
PsP3	0.00
PsP5	0.00
PsM5	0.00
PsP15	0.00
PsM15	0.00
AccX2	0.00
AccY2	0.00
ITemp	0.00
MTemp	0.00
PsP400	0.00
MVolt	0.00
MCurr	0.00
MSpd	0.00
XHUERR1	0.00
XHUERR2	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	1.00	1.44	1.00
TTTCU-002 (10009834) Through Tubing Telemetry Cartridge - Ultrawire	7.66	1.69	37.00
XHU-003 (10004395) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
HCBLM-A (110928) Halliburton HCBLM Tool	9.38	2.75	116.00
Probe_275 Probe 2 3/4 Centralizer	2.17	2.75	20.00
HAL-CAST-M-ELECT-CAST-M-Elect (11927.58)	5)	2.75	30.00
CAST M ELECTRONIC			
HAL-CAST-M-4 3/8 SCAN (11922569_4387.78 4 3/8 SCAN CASTM		4.38	276.00

Dataset: goodmanpoint21.db: field/well/run1/MAIN6
Total Length: 37.15 ft
Total Weight: 487.00 lb
O.D. 4.38 in

Company	KINDER MORGAN C02 Co. L.P.		
Well	HB # 6		
Field	MCELMO		
County	MONTEZUMA	State	CO

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ACOUSTIC CEMENT
BOND LOG