



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

**COMPENSATED
DENSITY / NEUTRON
PE LOG**

Company		CASTELLI EXPLORATION, INC.	
Well	HEILAND #2-18		
Field	MARCOTTE		
County	ROOKS	State	KANSAS
Company	CASTELLI EXPLORATION, INC.		
Well	HEILAND #2-18		
Field	MARCOTTE		
County	ROOKS	State	KANSAS
Location:	API # : 15-163-24138-0000		Other Services
330' FSL & 2310' FEL		DIL/MEL	
SEC 18 TWP 10S RGE 19W		Elevation	
Permanent Datum	GROUND LEVEL	Elevation	2220
Log Measured From	KELLY BUSHING 5' A.G.L.	K.B.	2225
Drilling Measured From	KELLY BUSHING	D.F.	2223
		G.L.	2220
Date	8/27/13		
Run Number	ONE		
Depth Driller	3900		
Depth Logger	3897		
Bottom Logged Interval	3873		
Top Log Interval	3000		
Casing Driller	8 5/8"@218'		
Casing Logger	218		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 2,000 PPM	
Density / Viscosity	9.1/58		
pH / Fluid Loss	9.0/10.2		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	.800@80F		
Rinf @ Meas. Temp	.600@80F		
Rmc @ Meas. Temp	.960@80F		
Source of Rinf / Rmc	MEASUREMENT		
Rim @ BHT	.557@115F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	11:45 P.M.		
Maximum Recorded Temperature	115F		
Equipment Number	4854		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	TOM CASTELLI	RICK POPP	

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, 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. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

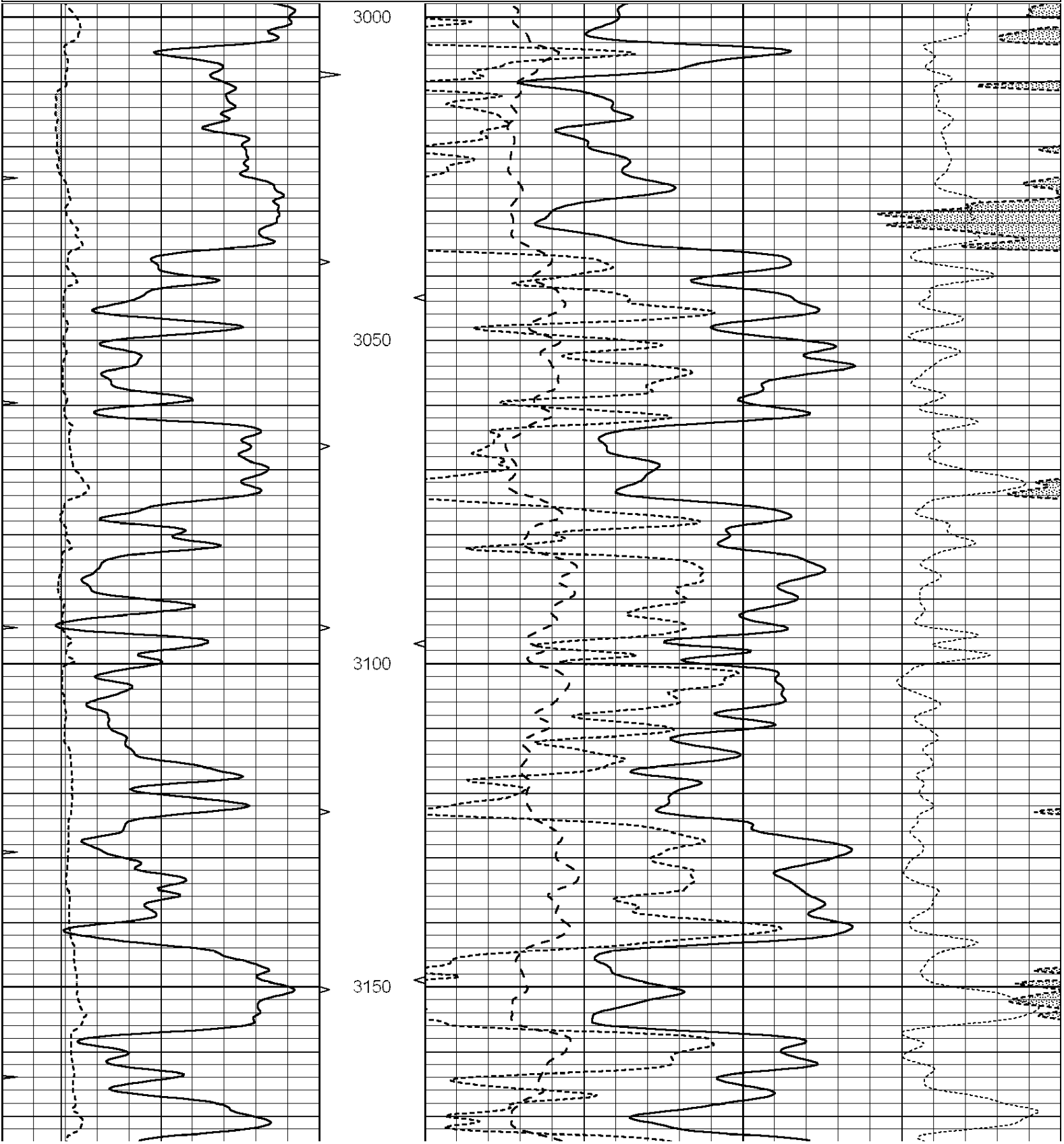
Comments

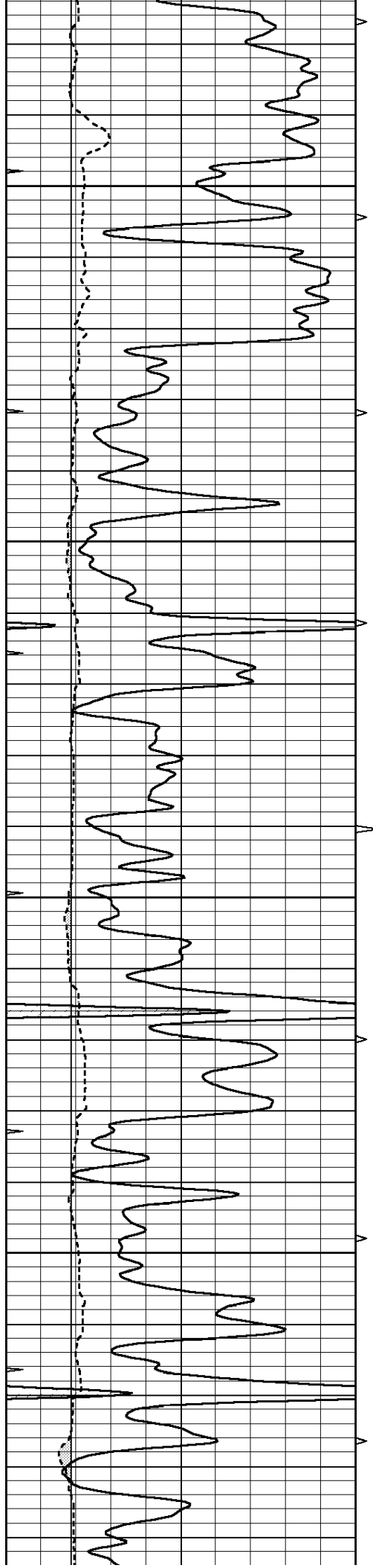
THANK YOU FOR USING "NABORS" HAYS, KANSAS (785) 628-6395
DIRECTIONS
ZURICH, KS., 2W.,4S.,1/2W., N. INTO

Database File: 011660pe.db
Dataset Pathname: pass3.4
Presentation Format: ldt_neu
Dataset Creation: Tue Aug 27 00:58:11 2013 by Calc SOC 120430
Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)			-10	
6	CALIPER (in)	16	10 (ft3)	0	30	COMPENSATED NEUTRON (pu)			-10

0	MINMK	20	TBHV	0	PE	10	-0.25	CORRECTION (g/cc)	0.25
			0 (ft3)	10	-----				



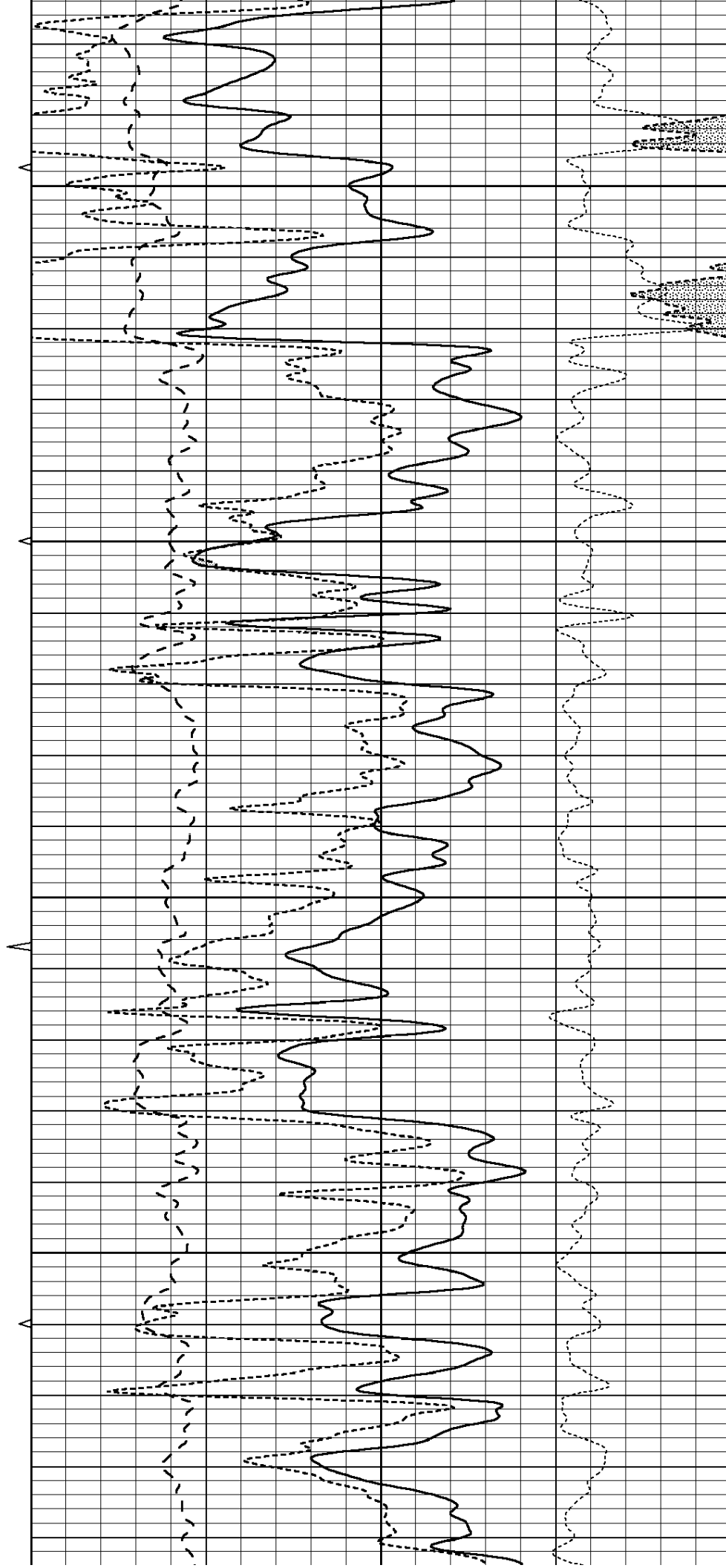


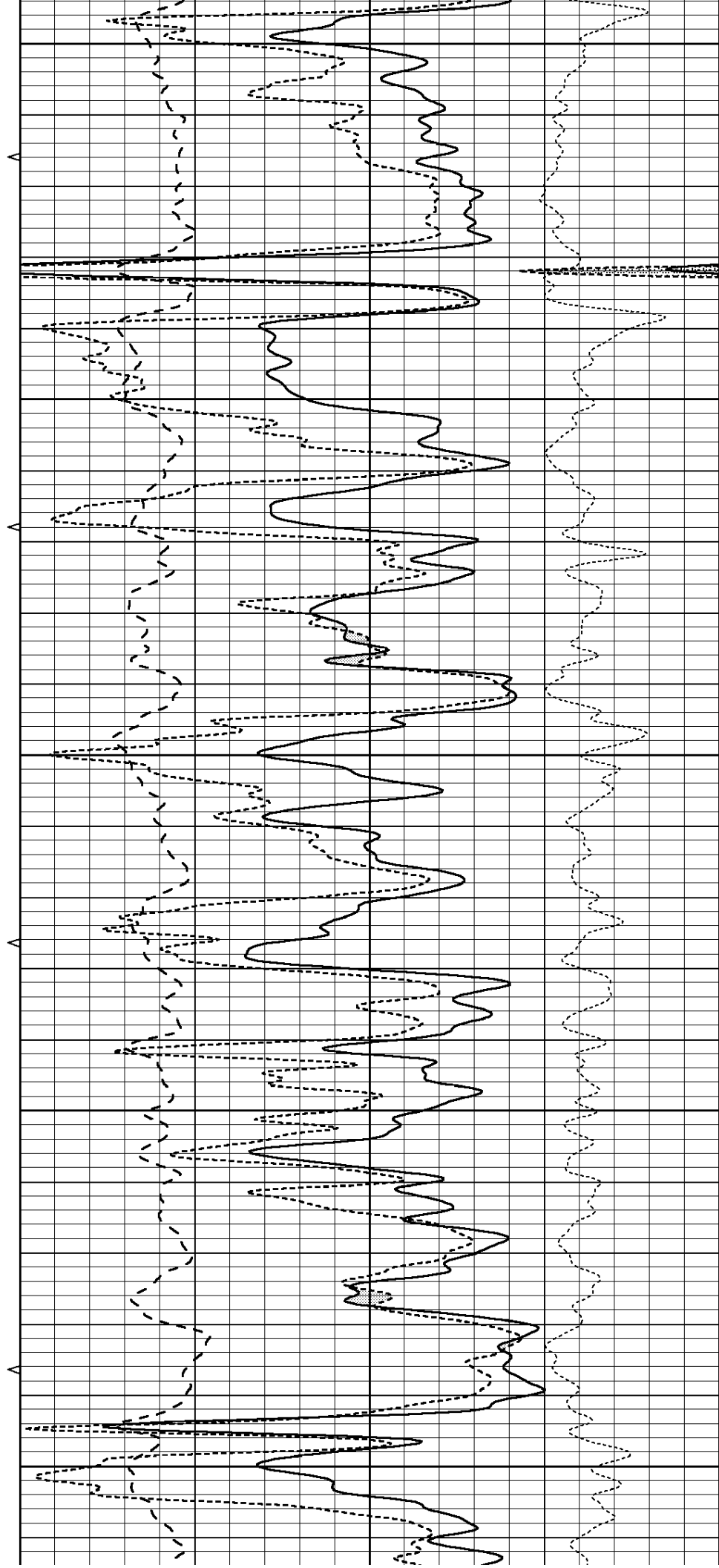
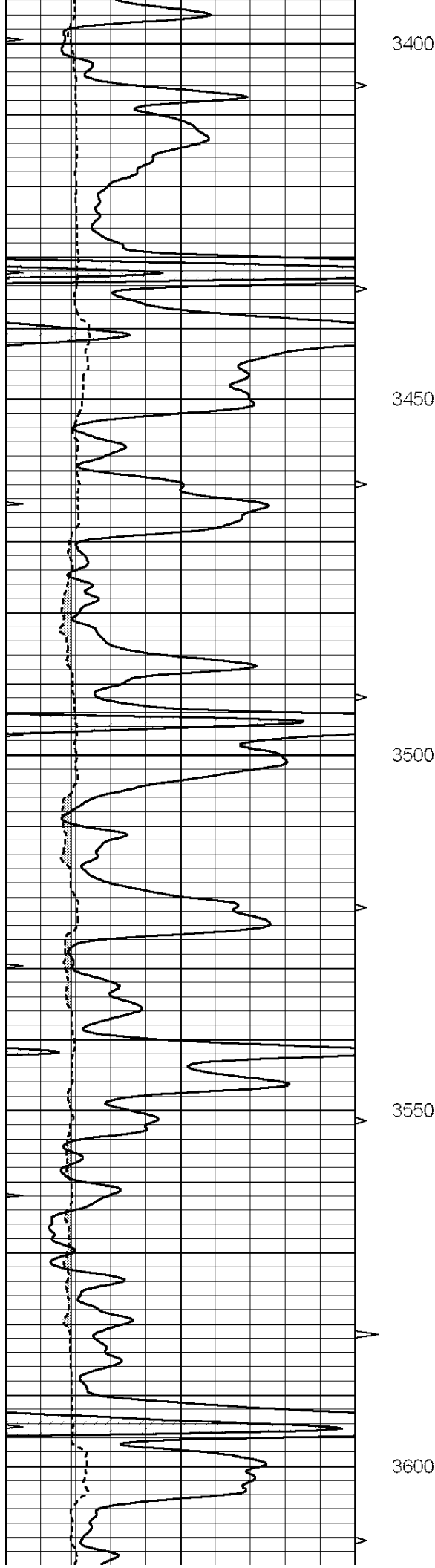
3200

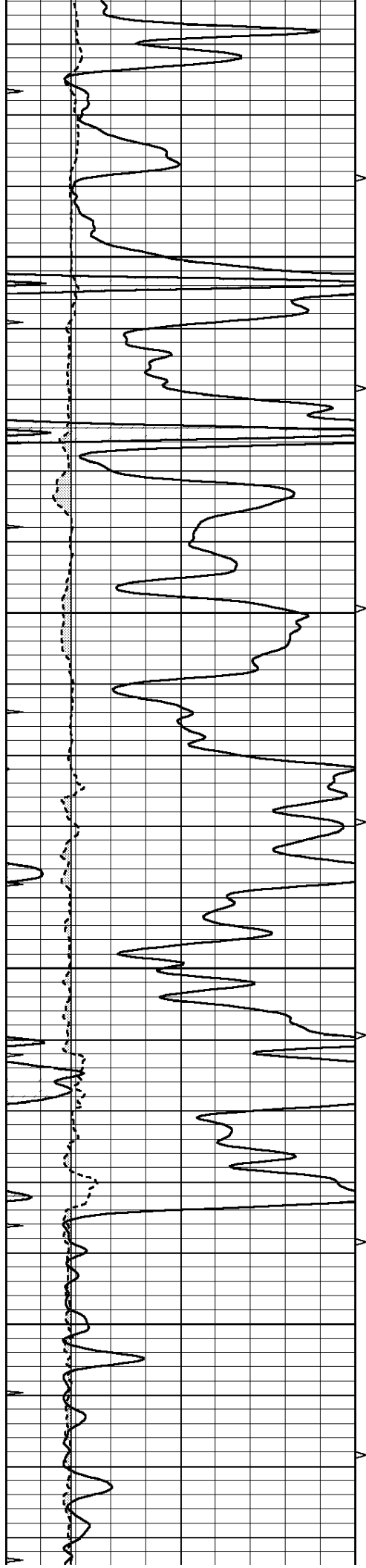
3250

3300

3350







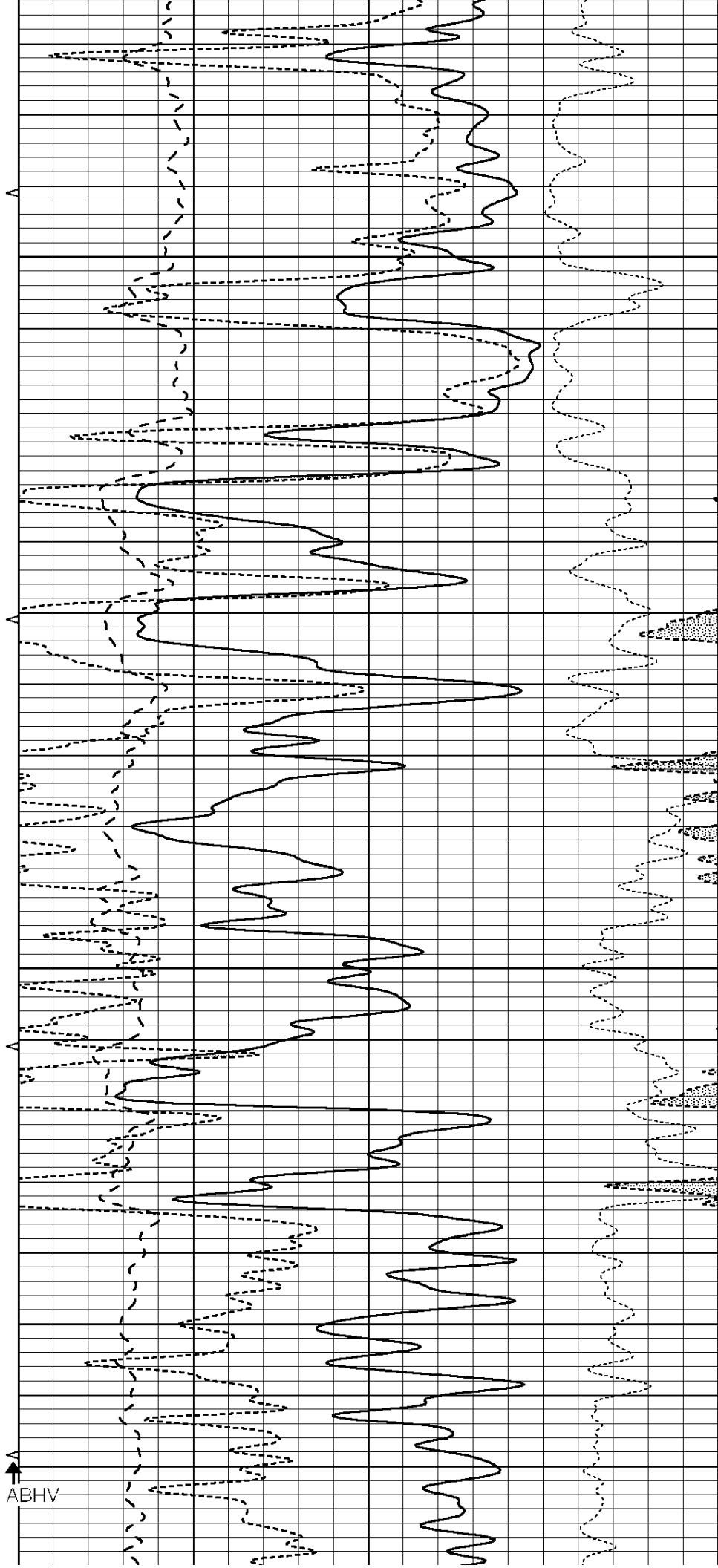
3650

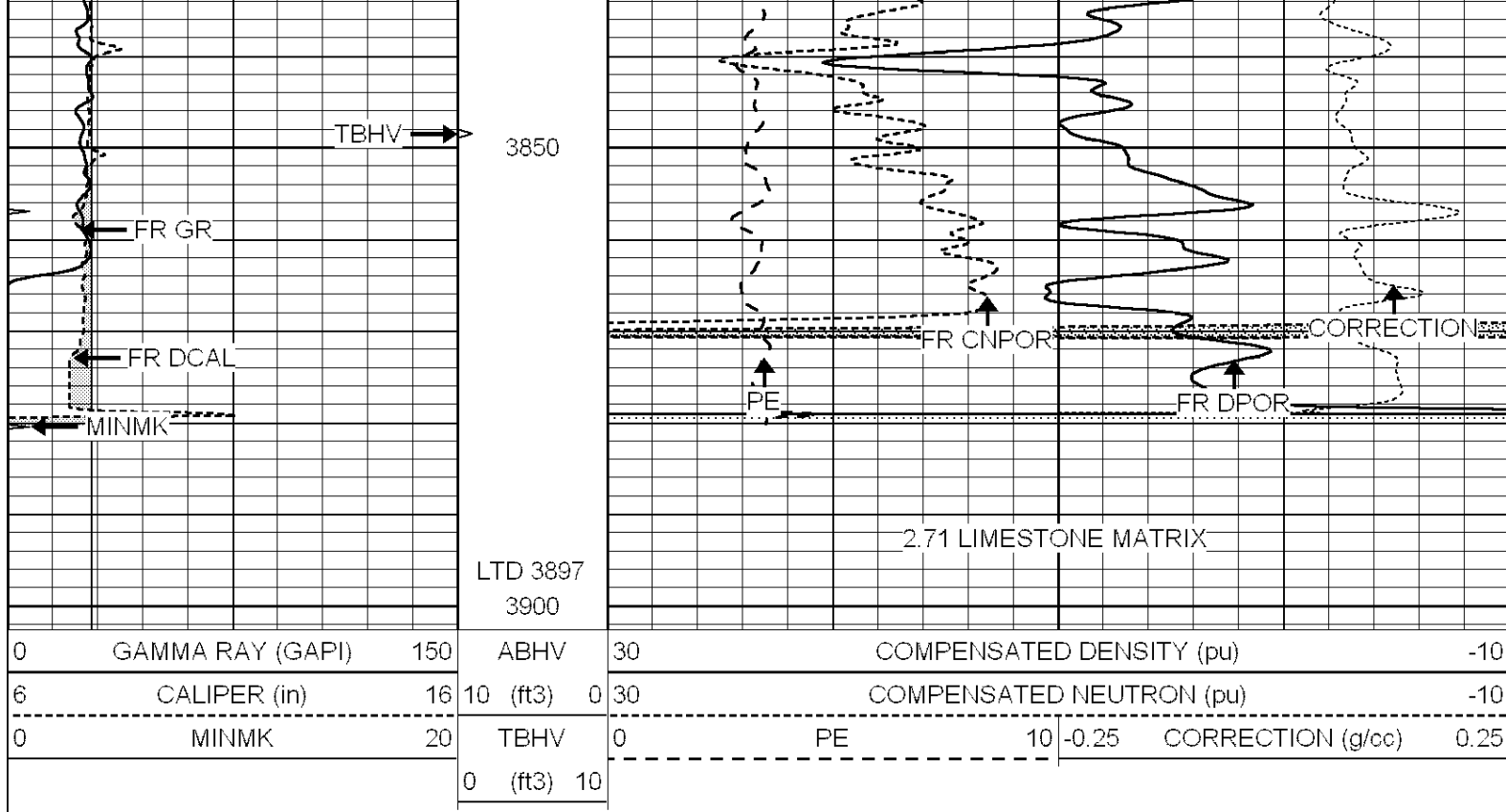
3700

3750

3800

5.5" ABHV

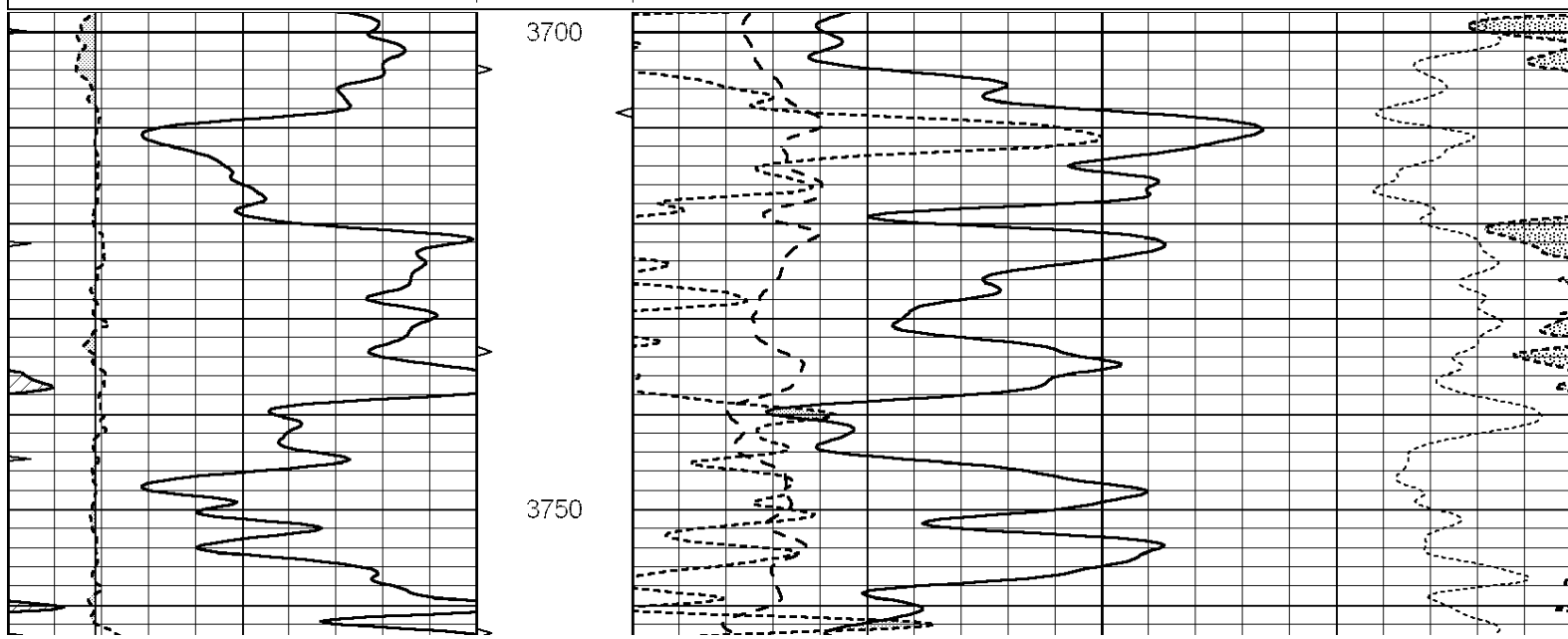


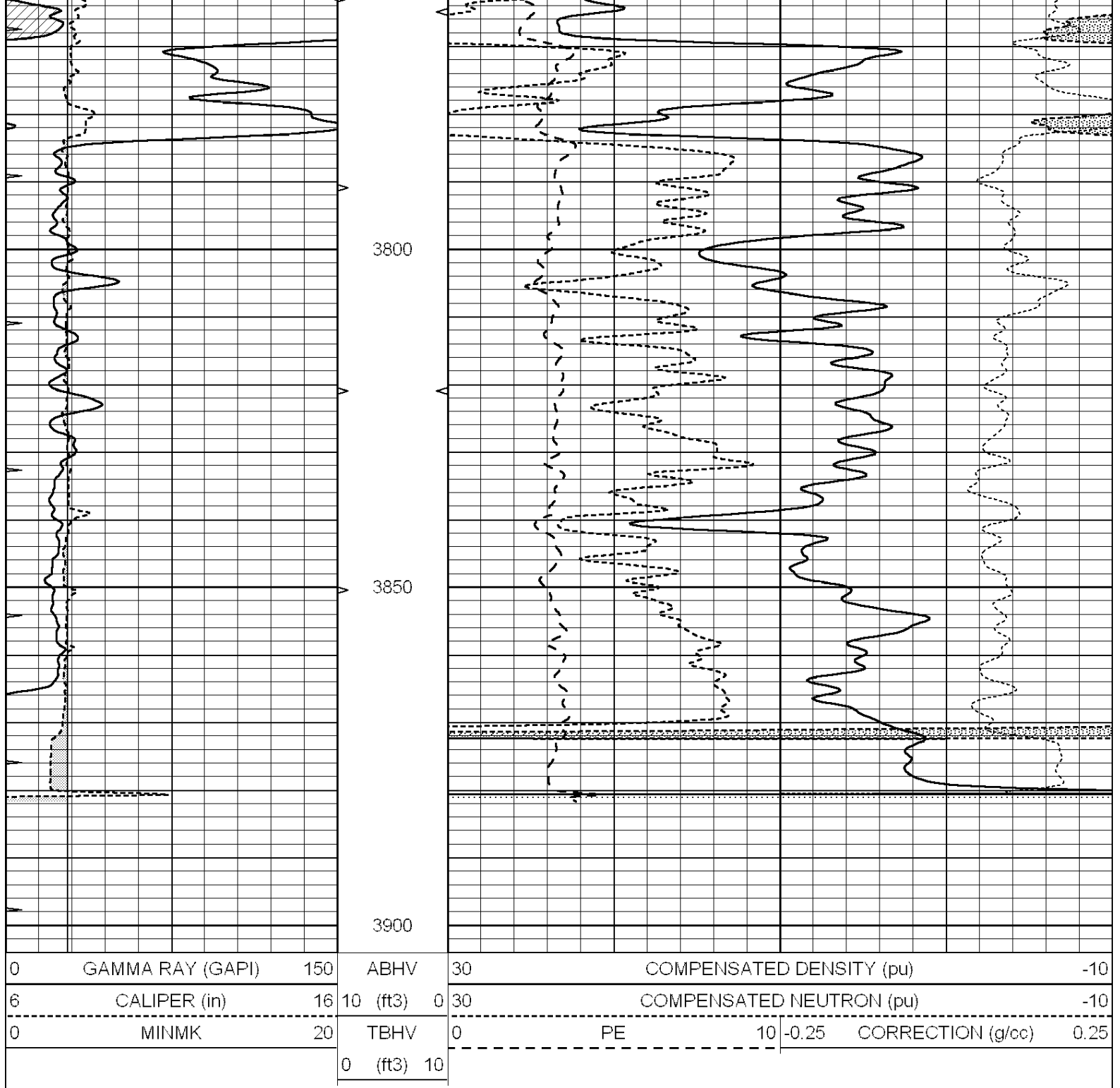


REPEAT SECTION

Database File: 011660pe.db
 Dataset Pathname: pass2.2
 Presentation Format: ldt_neu
 Dataset Creation: Tue Aug 27 00:09:42 2013 by Calc SOC 120430
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)				-10	
6	CALIPER (in)	16	10 (ft3)	0	30	COMPENSATED NEUTRON (pu)				-10
0	MINMK	20	TBHV	0	PE	10	-0.25	CORRECTION (g/cc)	0.25	
			0 (ft3)	10						

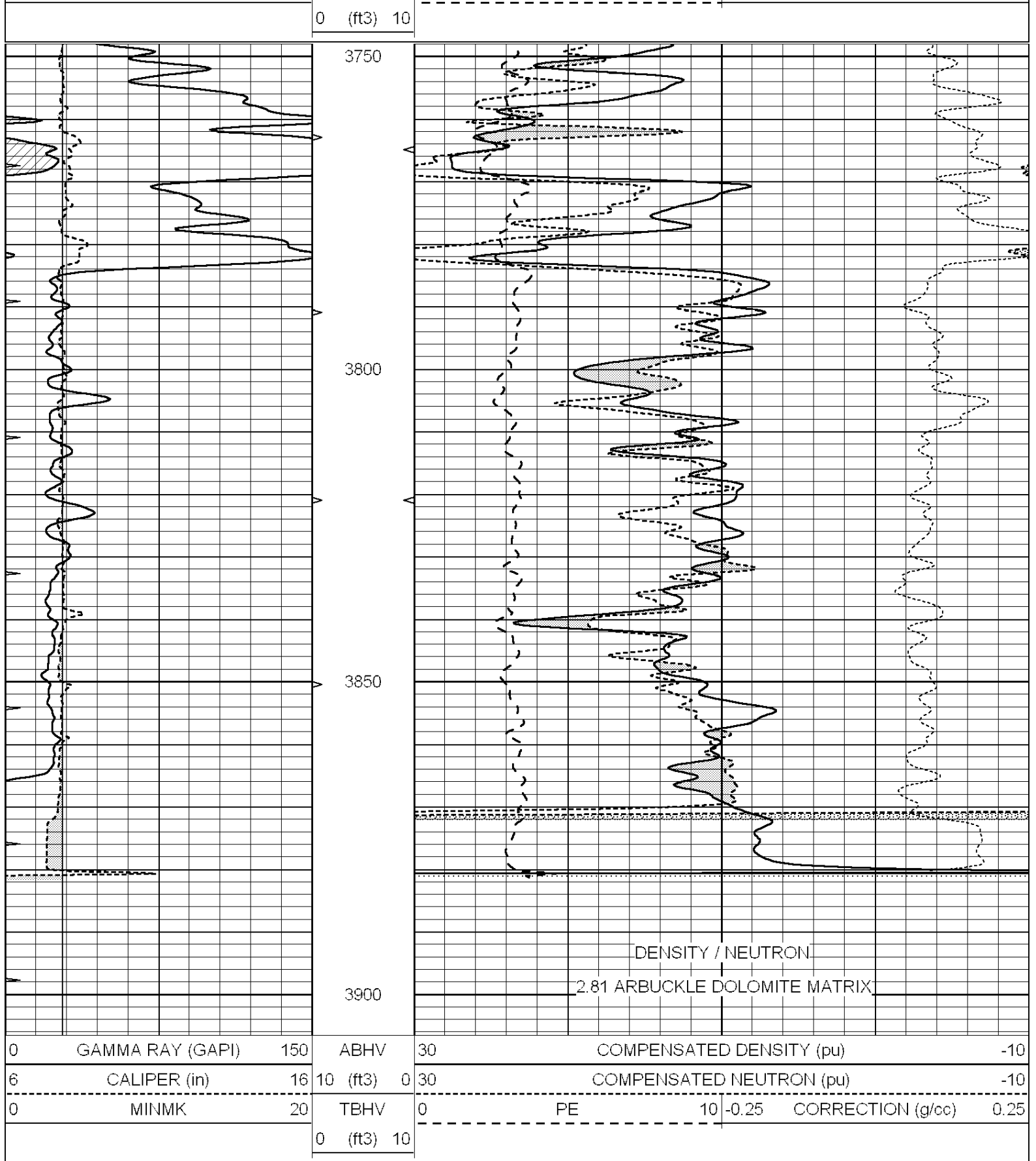




DOLOMITE MATRIX

Database File: 011660pe.db
 Dataset Pathname: pass2.4
 Presentation Format: ldt_neu
 Dataset Creation: Tue Aug 27 01:10:46 2013
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV	0	PE	10 -0.25 CORRECTION (g/cc) 0.25



Calibration Report

Database File: 011660pe.db
Dataset Pathname: pass3.4
Dataset Creation: Tue Aug 27 00:58:11 2013 by Calc SOC 120430

Dual Induction Calibration Report

Serial-Model:
Surface Cal Performed:

PROBE9-DILG
Thu Aug 15 11:46:50 2013

Surface Calibration								
Readings				References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	621.923	-10.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	640.000	-19.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.011	0.610	V	0.000	400.000	mmho/m	667.135	-7.256
Medium	0.005	0.712	V	0.000	464.000	mmho/m	655.677	-3.102

Downhole Calibration								
Readings				References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	14.508	388.384	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	166.367	504.400	mmho/m	1.000	0.000
LL3		7.500	V		1400.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		4000.000	mmho-m		

After Survey Verification								
Readings				Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
Medium	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
LL3		1.000	Ohm-m		1.000	Ohm-m		
		0.000	Ohm-m		0.000	Ohm-m		
		1.000	mmho-m		1.000	mmho-m		

Litho Density Calibration Report								
Serial: 001			Model: PRB					

Master Calibration				Performed Tue May 28 08:54:22 2013				
	Background	Magnesium		Aluminum		Sandstone		
Window 1	1890.3	12786.5		4236.7		13497.2		cps
Window 2	1764.1	11051.7		3765.5		11456.4		cps
Window 3	1442.8	5894.4		2376.2		5911.4		cps
Window 4	428.0	428.9		420.8		426.5		cps
Long Space	0.0	9287.6		2001.3		9692.3		cps
Short Space	3.2	3351.1		2186.8		3398.0		cps
Rho		1.7100		2.5900		1.3800		g/cc
Pe		0.0000		2.5700		1.5500		
Rib Angle	: 44.5	Rib Slope	: 0.981	Density/Spine Ratio			: 0.552	
Spine Angle	: 74.5	Spine Slope	: 3.596	Spine Intercept			: -20.1	

Before Survey Verification				Performed Wed Dec 31 18:00:00 1969				
Window 1	0.0	0.0		0.0		0.0		cps
Window 2	0.0	0.0		0.0		0.0		cps
Window 3	0.0	0.0		0.0		0.0		cps
Window 4	0.0	0.0		0.0		0.0		cps
Long Space	0.0	0.0		0.0		0.0		cps
Short Space	0.0	0.0		0.0		0.0		cps
Measured Rho		0.0000		0.0000		0.0000		g/cc

Measured Correction		0.0000	0.0000	0.0000	g/cc
Measured Pe			0.0000	0.0000	
After Survey Verification					
Performed Wed Dec 31 18:00:00 1969					
Window 1	0.0	0.0	0.0	0.0	cps
Window 2	0.0	0.0	0.0	0.0	cps
Window 3	0.0	0.0	0.0	0.0	cps
Window 4	0.0	0.0	0.0	0.0	cps
Long Space	0.0	0.0	0.0	0.0	cps
Short Space	0.0	0.0	0.0	0.0	cps
Measured Rho		0.0000	0.0000	0.0000	g/cc
Measured Correction		0.0000	0.0000	0.0000	g/cc
Measured Pe			0.0000	0.0000	
Compensated Neutron Calibration Report					
Serial Number:		070808			
Tool Model:		Probe			
PRE-SURVEY VERIFICATION					
Detector	Readings	Measured	Target		
Short Space	cps				
Long Space	cps	pu	pu		
POST-SURVEY VERIFICATION					
Detector	Readings	Measured	Target		
Short Space	cps				
Long Space	cps	pu	pu		
Gamma Ray Calibration Report					
Serial Number:	070559				
Tool Model:	OPEN_GR				
Performed:	Wed Jun 12 18:25:42 2013				
Calibrator Value:	1.0	GAPI			
Background Reading:	0.0	cps			
Calibrator Reading:	1.0	cps			
Sensitivity:	0.3500	GAPI/cps			