



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

COMPENSATED DENSITY/NEUTRON LOG

Company	HUTCHINSON OIL COMPANY		
Well	ALAN NW #1		
Field	SHEPHERD SOUTH		
County	STAFFORD	State	KANSAS
Location:	AP1 # : 15-185-23828-0000 1050' FNL & 1490' FWL		Other Services DIL/MEL
Permanent Datum	SEC 21 TWP 22S RGE 11W	GROUND LEVEL	Elevation K.B. 1822 D.F. 1820 G.L. 1809
Log Measured From	KELLY BUSHING 13' A.G.L.		
Drilling Measured From	KELLY BUSHING		
Date	9/18/13		
Run Number	ONE		
Depth Driller	3699		
Depth Logger	3700		
Bottom Logged Interval	3676		
Top Log Interval	3000		
Casing Driller	8 5/8" @ 337		
Casing Logger	333		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 5000 PPM	
Density / Viscosity	9.0/60		
pH / Fluid Loss	9.0/8.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.60 @ 87F		
Rmt @ Meas. Temp	.45 @ 87F		
Rmc @ Meas. Temp	.72 @ 87F		
Source of Rmt / Rmc	MEASUREMENT		
Rm @ BHT	.46 @ 113F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	113F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	JEFF BURK		

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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, KS. (785) 628-6395
DIRECTIONS:
HUDSON, KS. - E. TO T IN THE ROAD - 1/2 N. - 1 E. - 3/4 N. - N & E. INTO

Database File:

011783ddn.db

Dataset Pathname:

pass3.1

Presentation Format:

den_neu

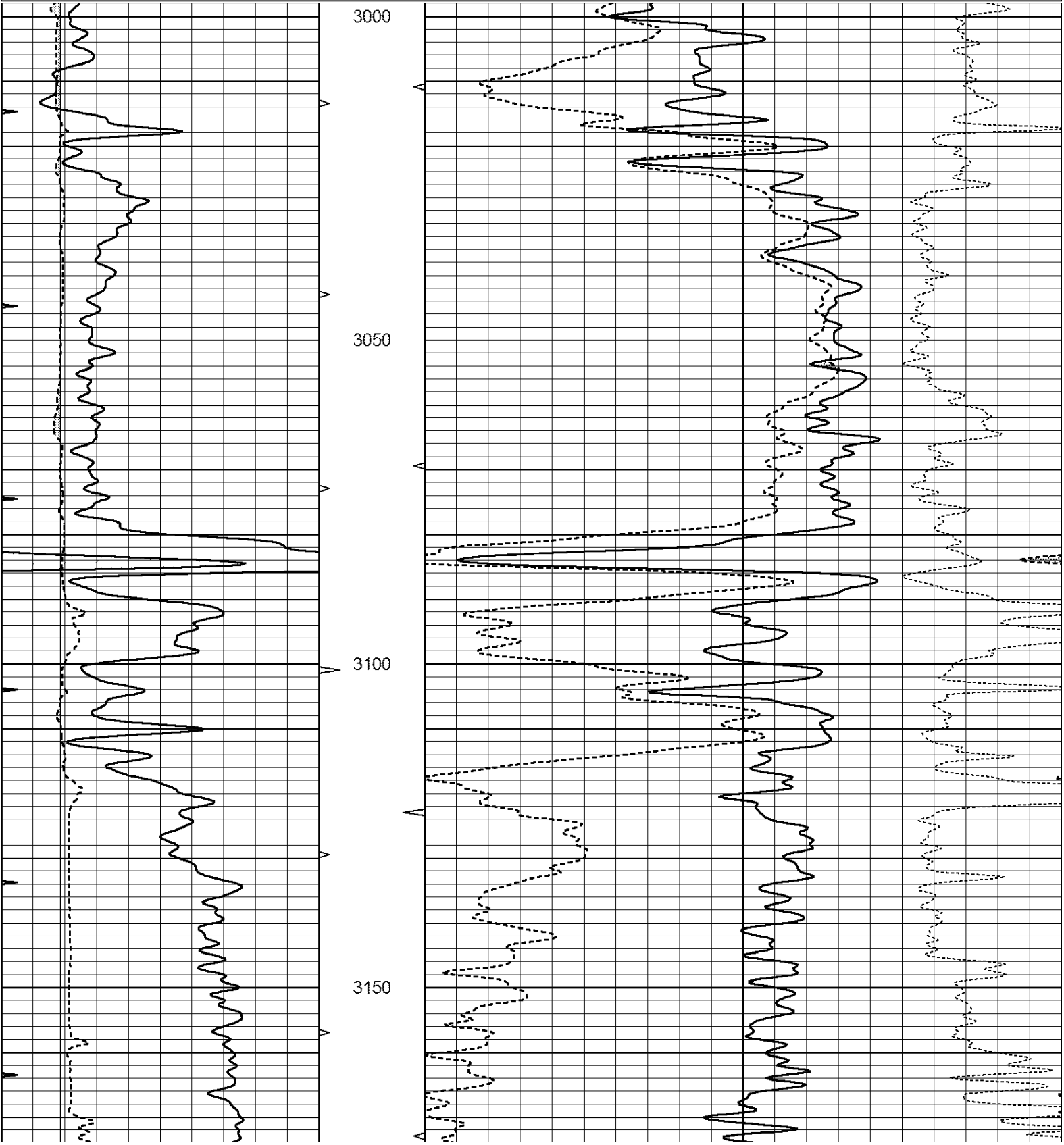
Dataset Creation:

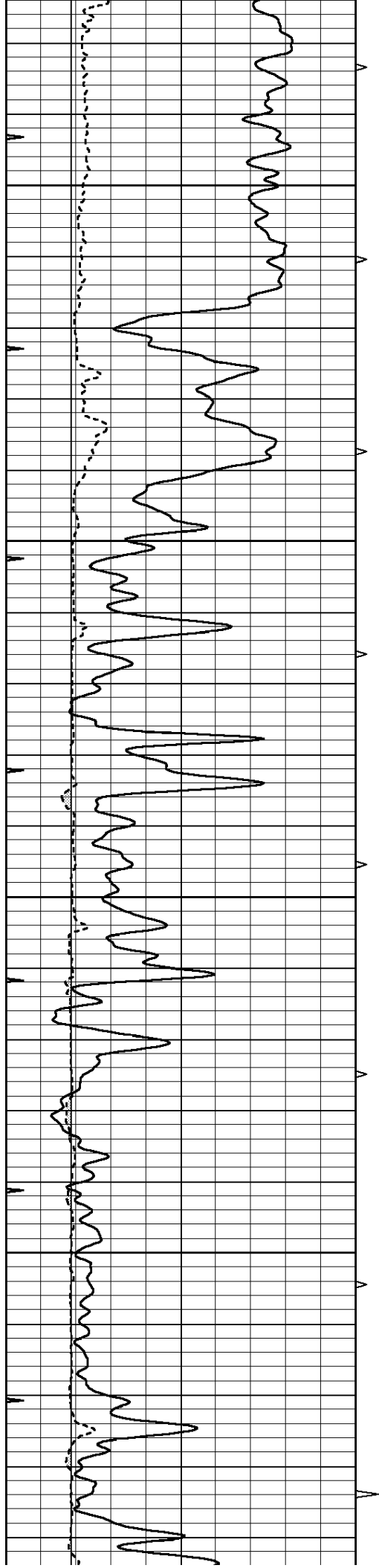
Wed Sep 18 03:34:30 2013 by Calc Open-Cased 090629

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		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		



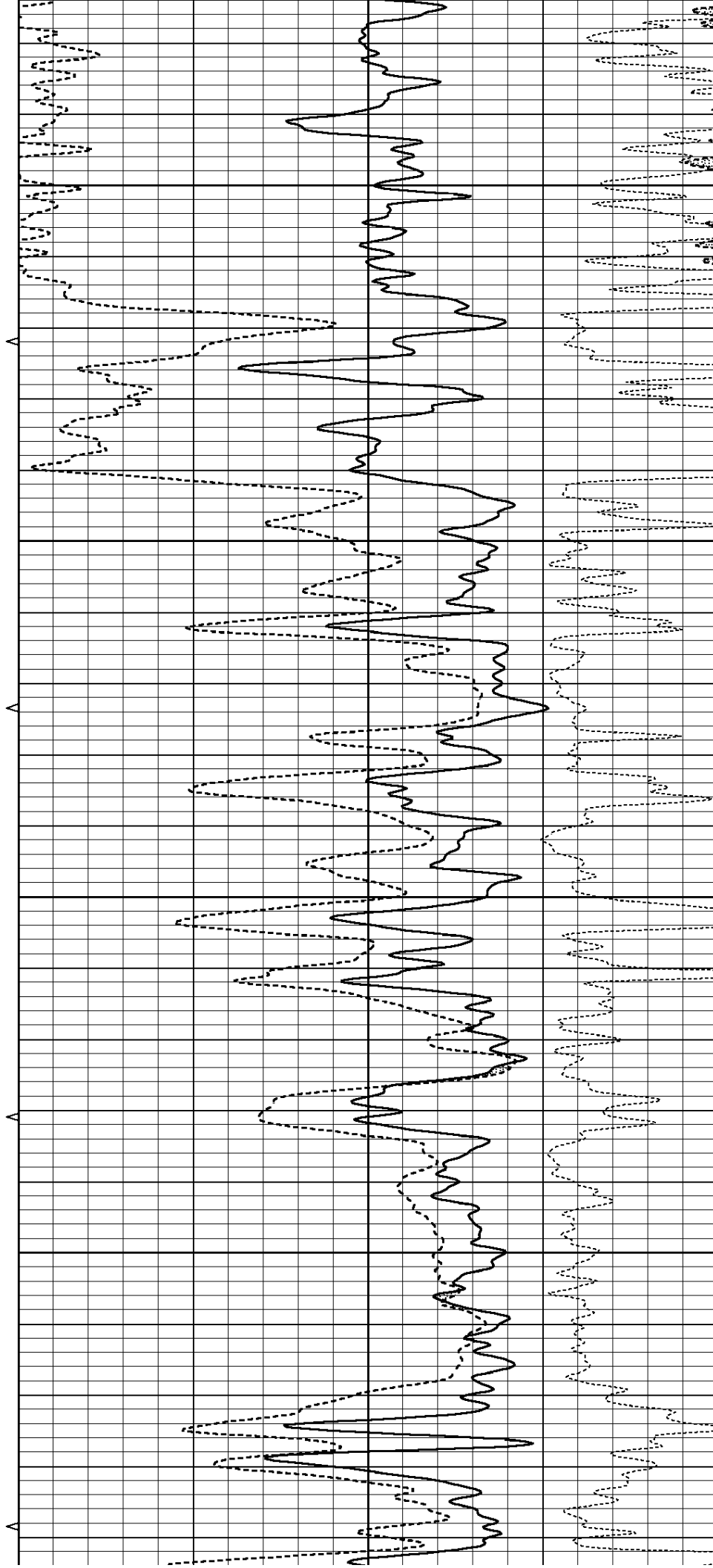


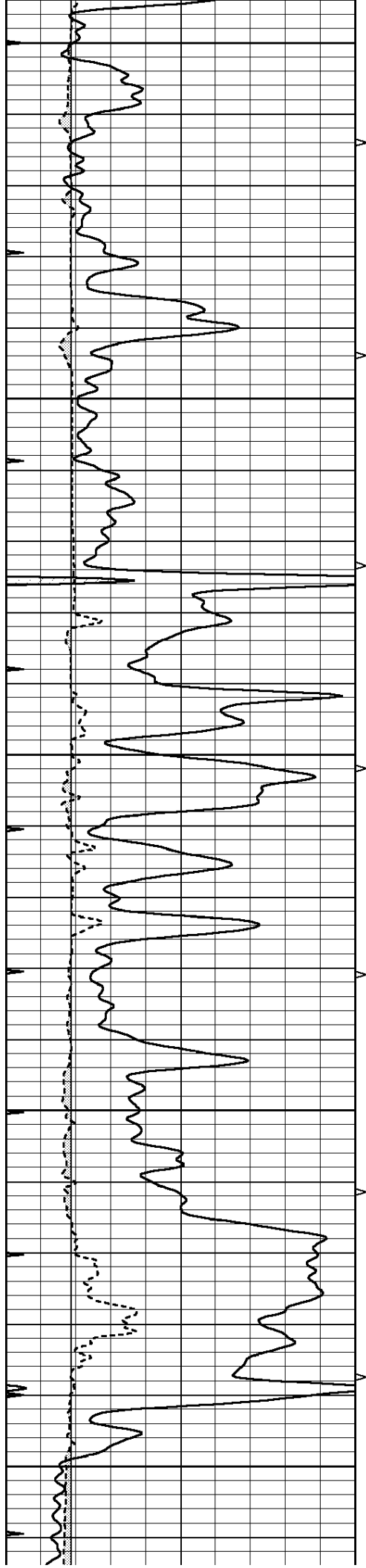
3200

3250

3300

3350





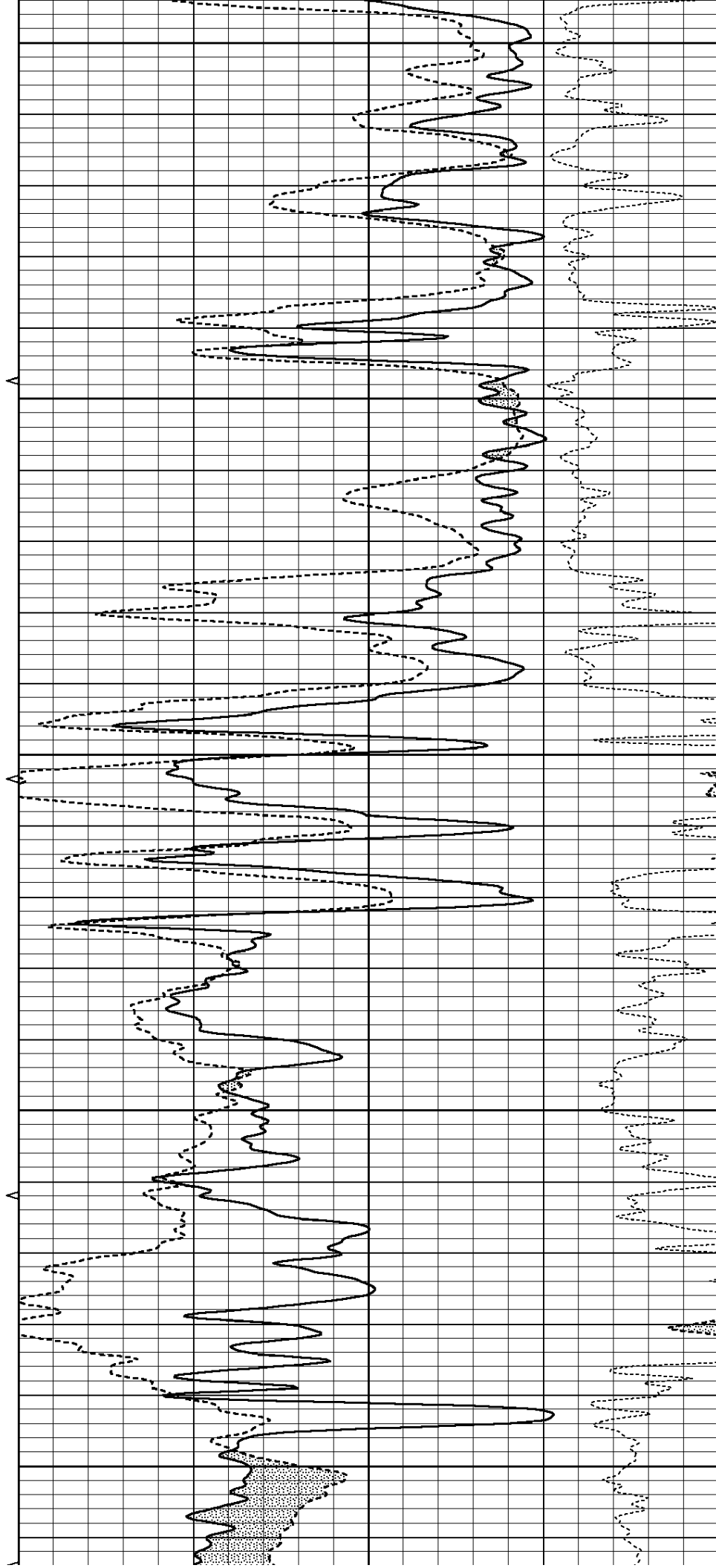
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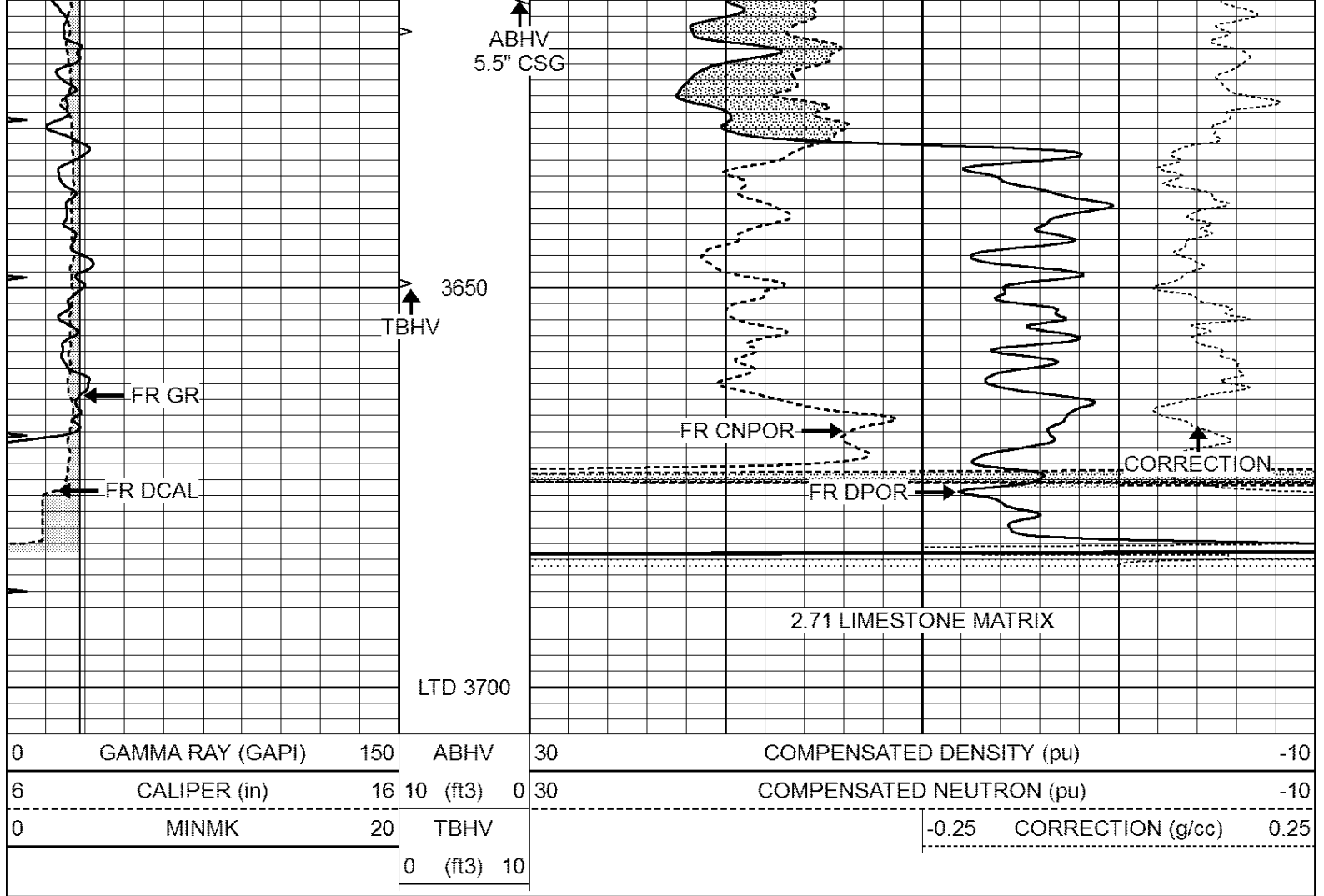
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3500

3550

3600

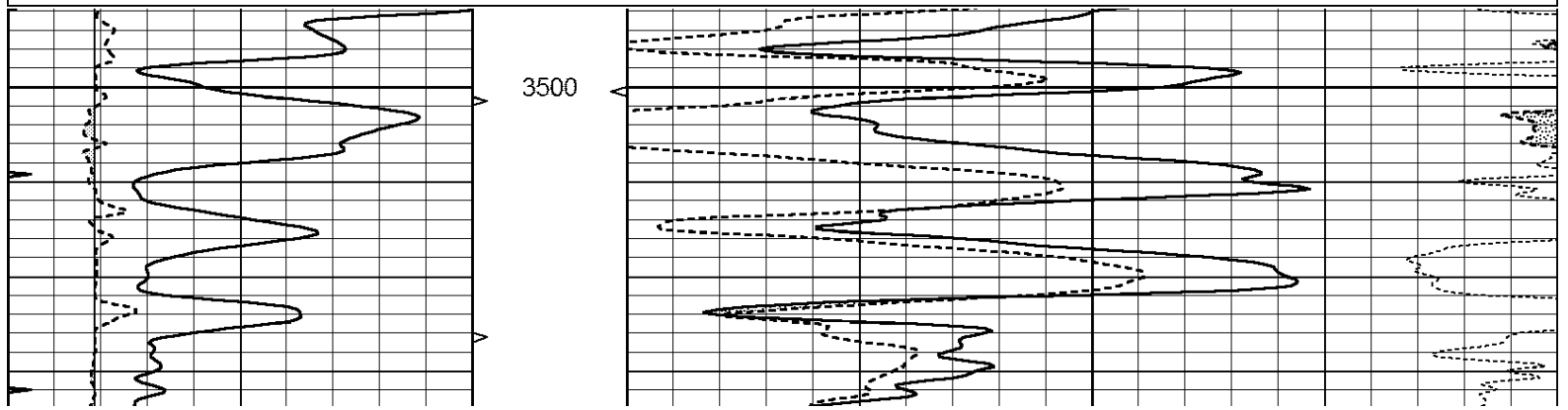


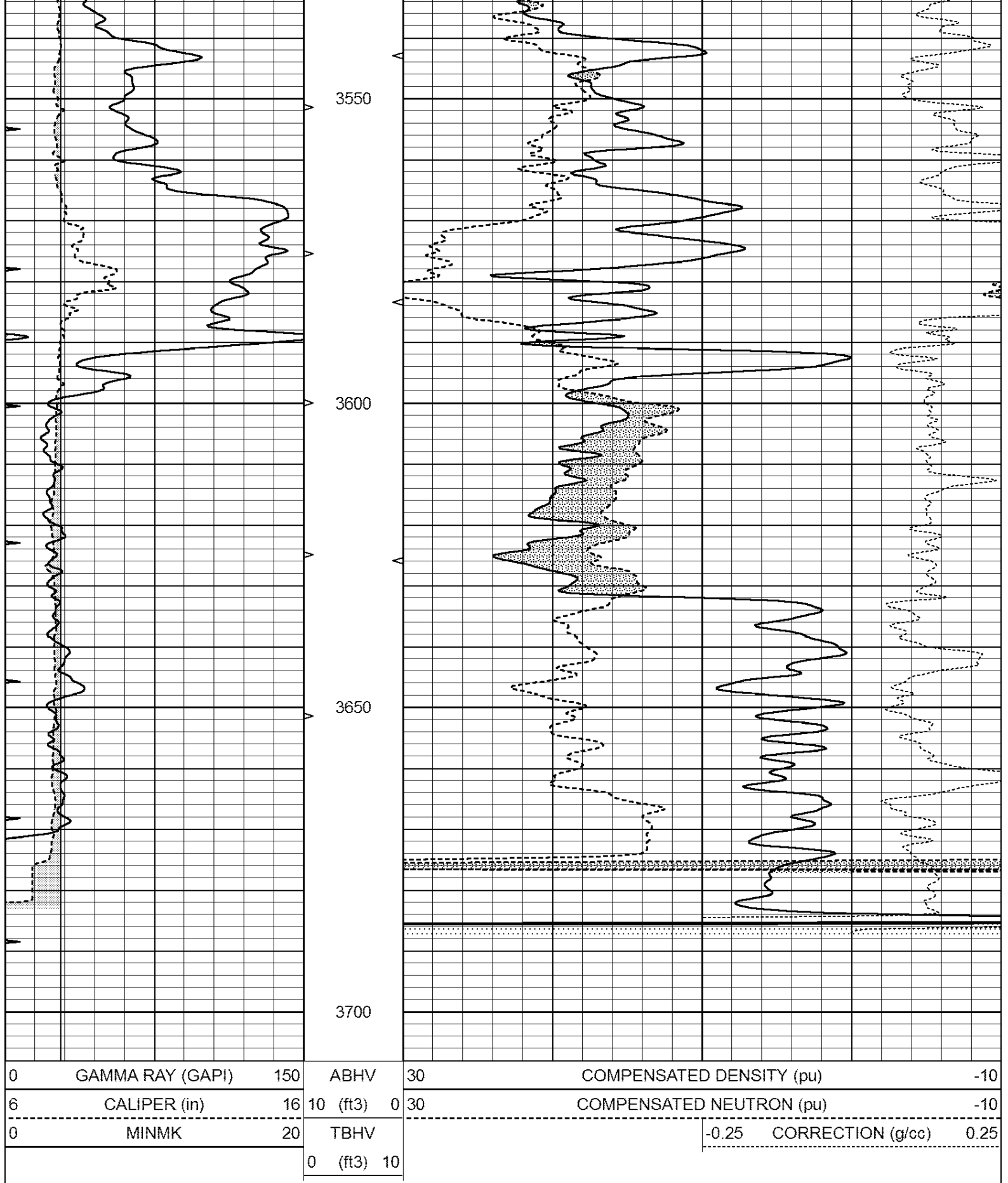


REPEAT SECTION

Database File: 011783ddn.db
 Dataset Pathname: pass2.1
 Presentation Format: den_neu
 Dataset Creation: Wed Sep 18 03:22:19 2013 by Calc Open-Cased 090629
 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		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		





Calibration Report

Database File: 011783ddn.db
Dataset Pathname: pass2.1
Dataset Creation: Wed Sep 18 03:22:19 2013 by Calc Open-Cased 090629

Serial-Model: PROBE8-DILG								
Surface Cal Performed: Fri Aug 01 06:33:19 2008								
Downhole Cal Performed: Mon Jul 28 11:08:27 2008								
After Survey Verification Performed: Mon Jul 28 11:08:27 2008								
Surface Calibration								
Readings			References			Results		
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	632.616	-9.730
Medium	0.029	0.796	V	0.000	464.000	mmho/m	605.049	-17.680
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.017	0.657	V	0.000	400.000	mmho/m	625.153	-10.619
Medium	0.016	0.757	V	0.000	464.000	mmho/m	625.992	-9.739
Downhole Calibration								
Readings			References			Results		
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	2.011	405.777	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	7.590	503.393	mmho/m	1.000	0.000
LL3		7.500	V		1500.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		3800.000	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		
Compensated Density Calibration Report								
Serial-Model: GEAR4-GEARHART								
Source / Verifier: 143 / 143								
Master Calibration Performed: Tue Jun 18 20:13:29 2013								
Before Survey Verification Performed:								
After Survey Verification Performed:								
Master Calibration								
Density			Far Detector		Near Detector			
Magnesium	1.710	g/cc	1075.98		532.39		cps	
Aluminum	2.560	g/cc	286.51		422.88		cps	
Spine Angle = 80.13			Density/Spine Ratio = 0.633					
Size			Reading					
Small Ring	8.00	in	3.21		V			
Large Ring	14.00	in	5.46		V			
Before Survey Verification								
Target			Measured					
		g/cc					g/cc	
		g/cc					g/cc	
		g/cc					g/cc	

After Survey Verification			
Target		Measured	
g/cc		g/cc	
g/cc		g/cc	
g/cc		g/cc	

Compensated Neutron Calibration Report

Serial Number:	6I
Tool Model:	G

CALIBRATION						
Detector		Readings		Target		Normalization
Short Space		1.00	cps	1.00	cps	1.0000
Long Space		1.00	cps	1.00	cps	1.0000

PRE-SURVEY VERIFICATION						
Detector		Readings		Measured		Target
1)	Short Space	cps				
	Long Space	cps		pu	pu	
2)	Short Space	cps				
	Long Space	cps		pu		
3)	Short Space	cps				
	Long Space	cps		pu		

POST-SURVEY VERIFICATION						
Detector		Readings		Measured		Target
1)	Short Space	cps				
	Long Space	cps		pu	pu	
2)	Short Space	cps				
	Long Space	cps		pu	pu	
3)	Short Space	cps				
	Long Space	cps		pu	pu	

Gamma Ray Calibration Report

Serial Number:	#8	
Tool Model:	OPEN	
Performed:	Tue Jun 18 19:34:11 2013	
Calibrator Value:	150.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	175.0	cps
Sensitivity:	0.8371	GAPI/cps