



**COMPLETION
& PRODUCTION
SERVICES CO.**

**COMPENSATED
DENSITY/NEUTRON
LOG**

Company GATEWAY RESOURCES, LLC.
Well WORCESTER #3-17
Field
County GRAHAM
State KANSAS

Company GATEWAY RESOURCES, LLC.
Well WORCESTER #3-17
Field
County GRAHAM State KANSAS

Location: 1717' FNL & 688' FEL
API # : 15-065-24079-0000
Other Services
DILMEL
Permanent Datum GROUND LEVEL Elevation 2335
Log Measured From KELLY BUSHING 10' A.G.L.
Drilling Measured From KELLY BUSHING
Elevation
K.B. 2345
D.F. 2343
G.L. 2335

Date	11/3/14
Run Number	ONE
Depth Driller	3980
Depth Logger	3978
Bottom Logged Interval	3954
Top Log Interval	3100
Casing Driller	8 5/8" @ 219
Casing Logger	
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.2/55
pH / Fluid Loss	11.0/8.4
Source of Sample	FLOWLINE
Rm @ Meas. Temp	1.20 @ 70F
Rmt @ Meas. Temp	0.90 @ 70F
Rmc @ Meas. Temp	1.44 @ 70F
Source of Rmf / Rmc	MEASUREMENT
Rm @ BHT	0.72 @ 116F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	
Maximum Recorded Temperature	116F
Equipment Number	4010
Location	HAYS, KANSAS
Recorded By	JEFF GRONIEWEG
Witnessed By	GARY GENSCH

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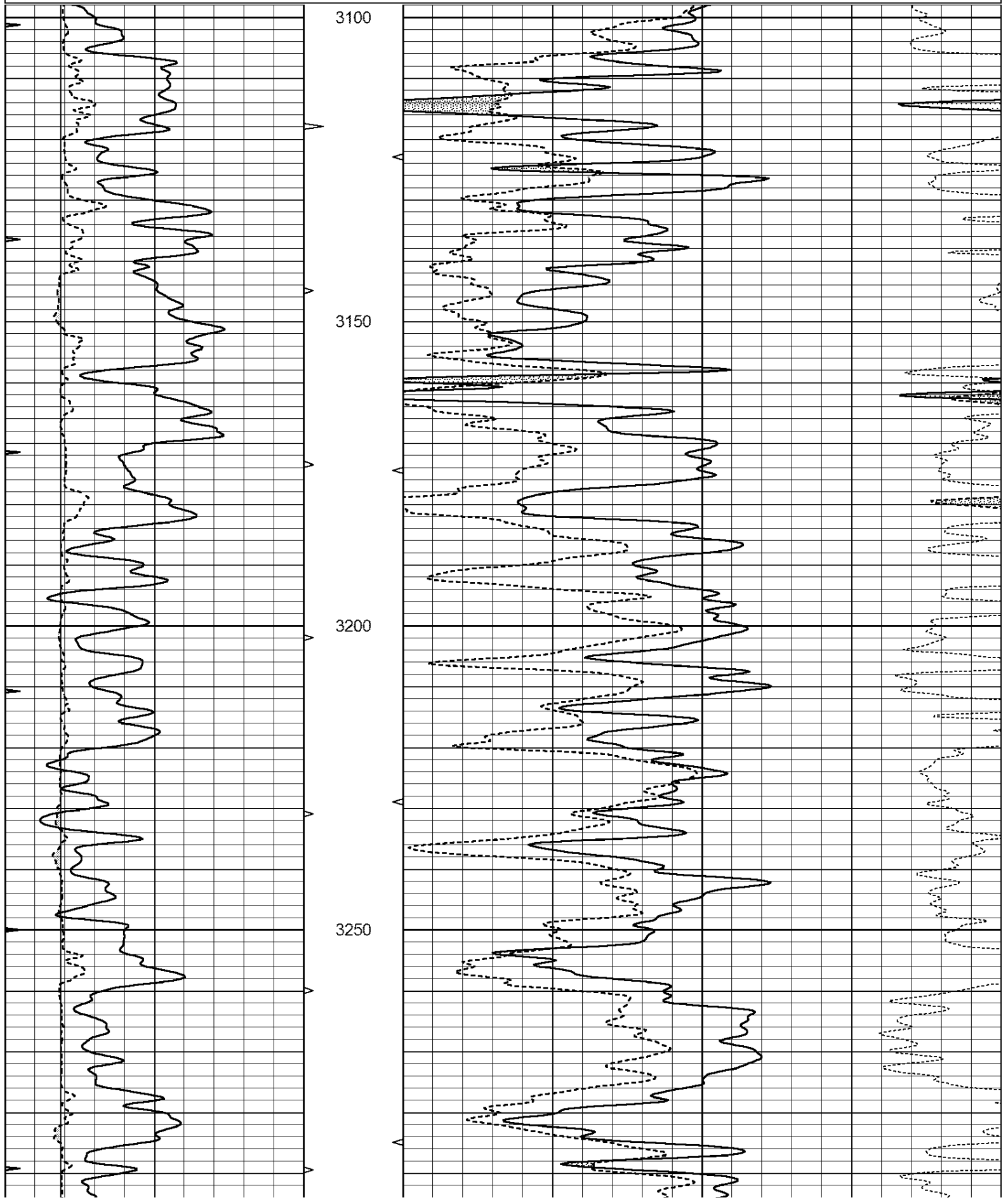
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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.

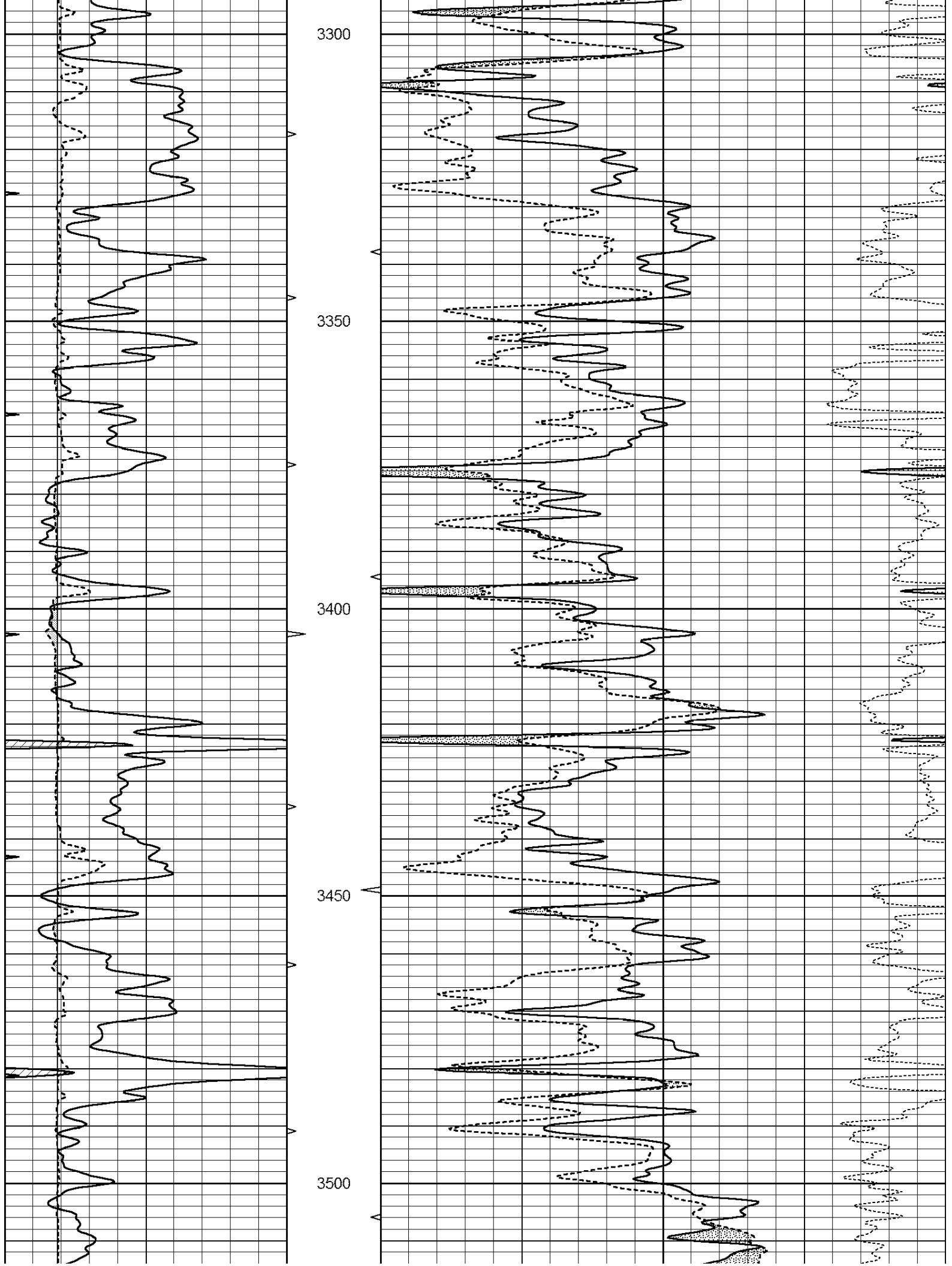
Comments

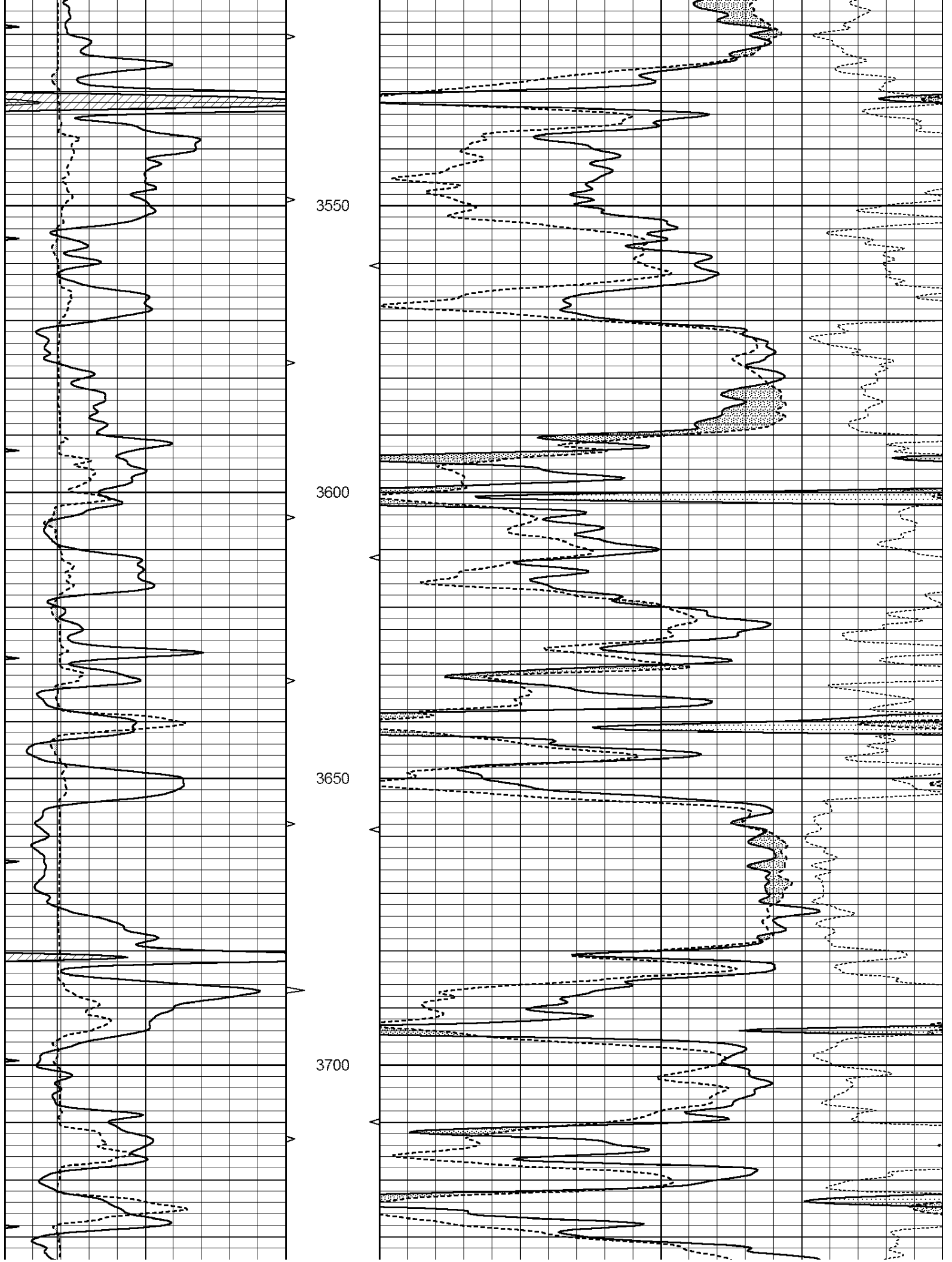
THANK YOU FOR USING NABORS, HAYS, KS. (785) 628-6395
DIRECTIONS:
HILL CITY, KS - 5 MILES NORTH TO RD V - 2 1/2 MILES EAST - .8 MILES NORTH
EAST INTO FOLLOW RIGHT FORK IN LOCATION RD

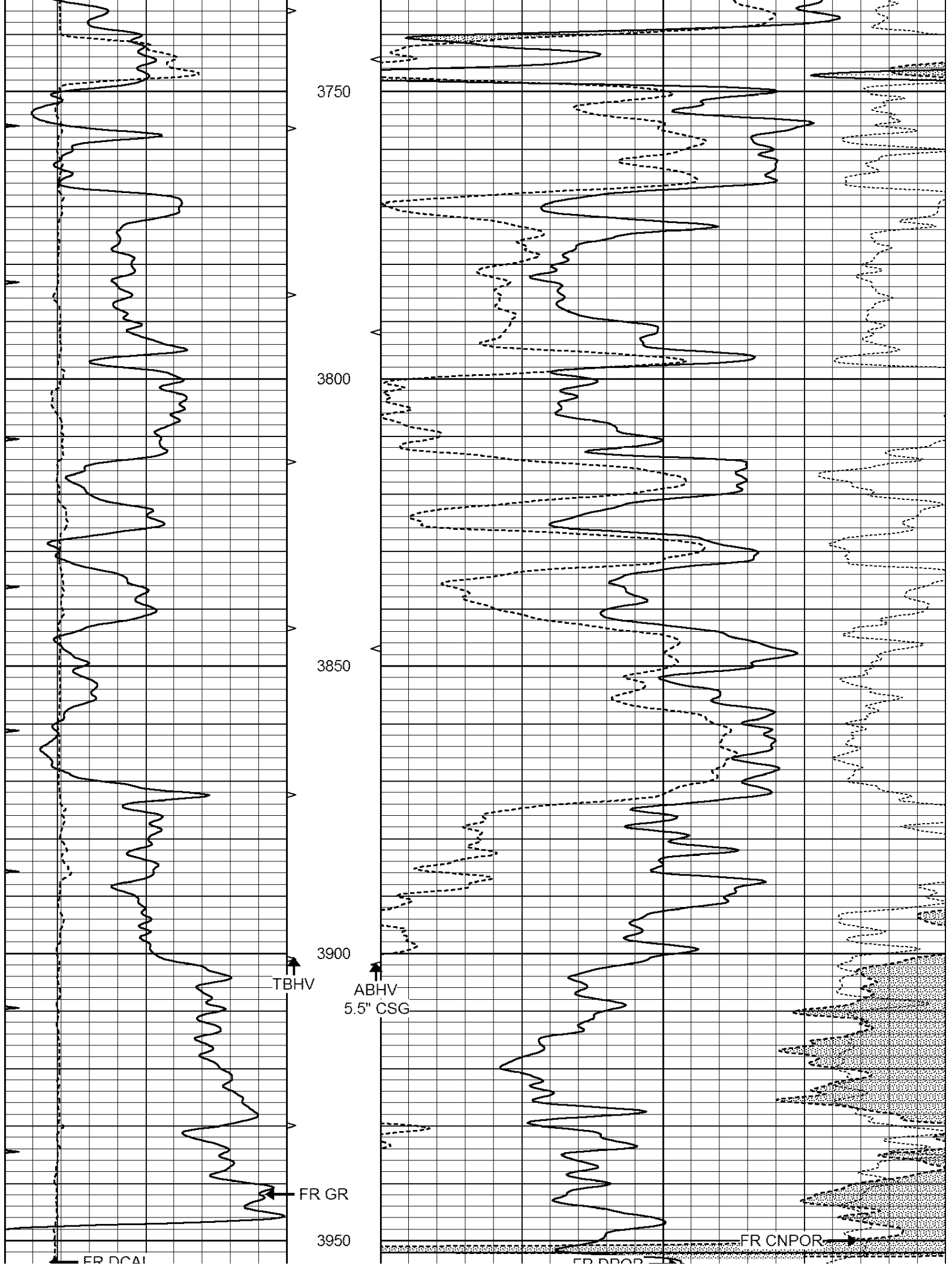
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Dataset Pathname: pass3.2
Presentation Format: den_neu
Dataset Creation: Mon Nov 03 19:20:36 2014 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:240

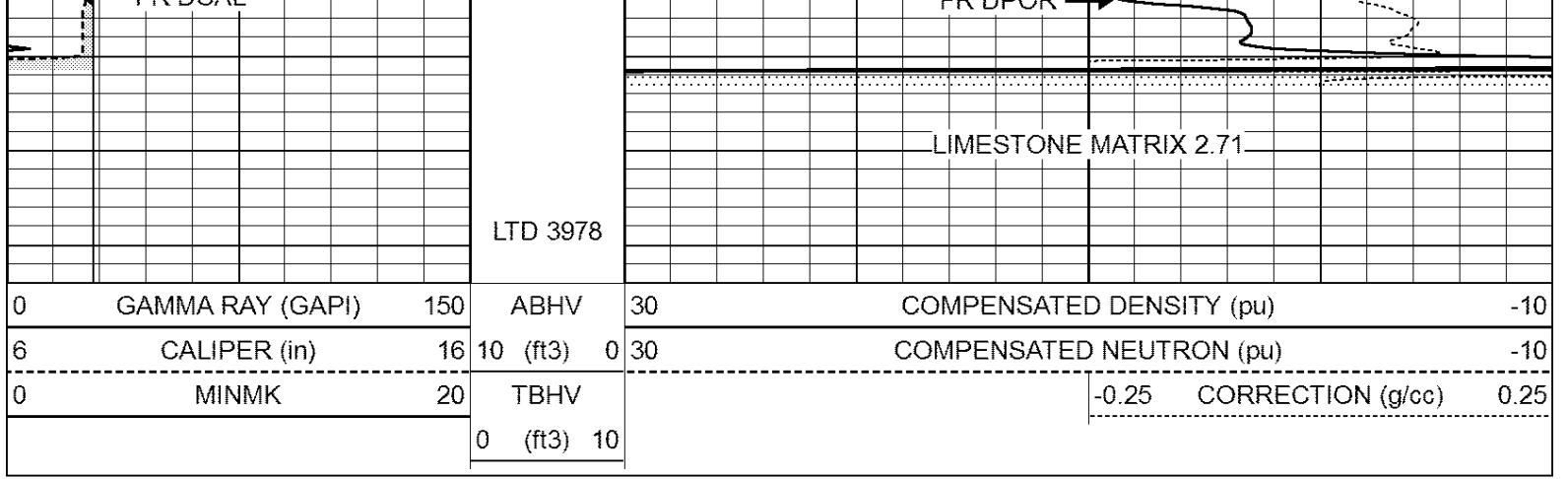
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		







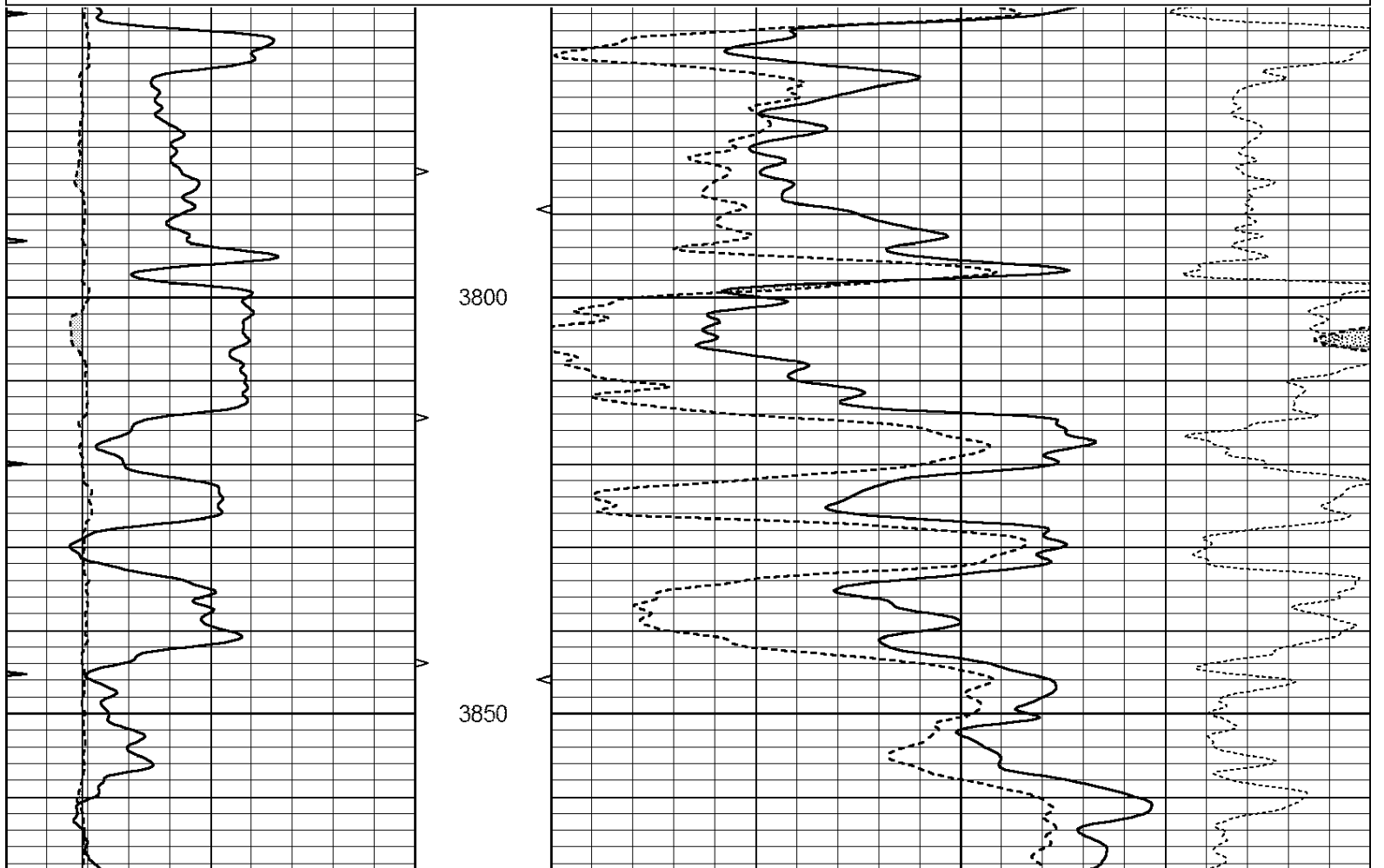


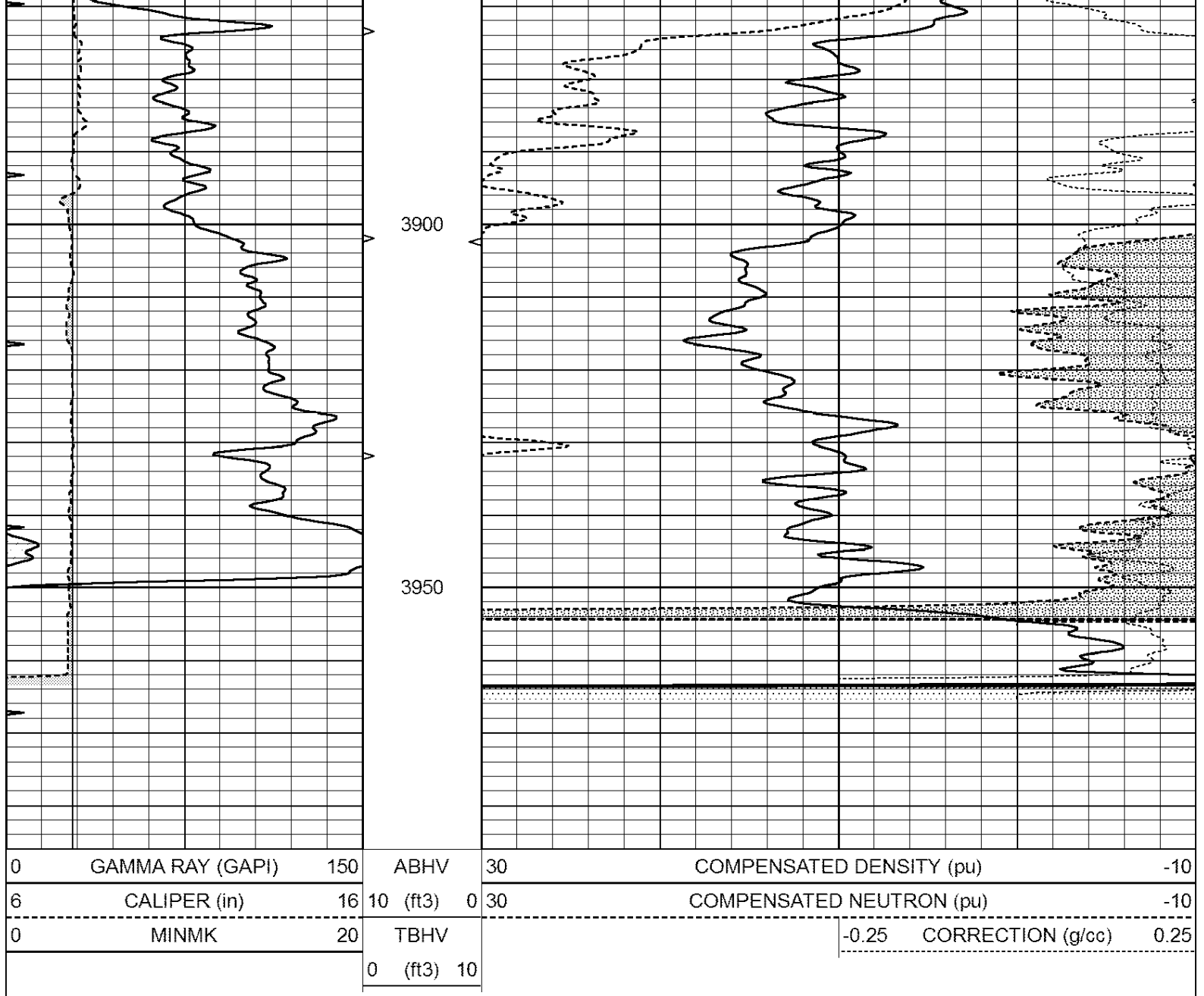


REPEAT SECTION

Database File: 26222ddn.db
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 Presentation Format: den_neu
 Dataset Creation: Mon Nov 03 19:25:40 2014 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: 26222ddn.db
 Dataset Pathname: pass3.2
 Dataset Creation: Mon Nov 03 19:20:36 2014 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: PROBE8-DILG
 Surface Cal Performed: Sun Aug 17 08:09:53 2014
 Downhole Cal Performed: Mon Jul 28 11:08:27 2008
 After Survey Verification Performed: Mon Jul 28 11:08:27 2008

Surface Calibration

Loop:	Readings				References		Results	
	Air	Loop	V		Air	Loop	m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	620.000	-2.000
Medium	0.029	0.796	V	0.000	464.000	mmho/m	590.000	-16.000
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:	Wed Sep 18 03:03:09 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:	GR6	
Tool Model:	OPEN	
Performed:	Sun Aug 17 15:23:09 2014	
Calibrator Value:	150.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	276.0	cps
Sensitivity:	0.7000	GAPI/cps