



**COMPLETION
& PRODUCTION
SERVICES CO.**

**COMPENSATED
DENSITY/NEUTRON
LOG**

Company BLACK DIAMOND OIL, INC.
Well KEMPER B UNIT #2
Field RAY WEST
County NORTON
State KANSAS

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Field RAY WEST
County NORTON State KANSAS

Location: API # : 15-137-20683-0000
SEC 23 TWP 5S RGE 21W
2250' FSL & 120' FWL
SW - NW - NW - SW
Permanent Datum GROUND LEVEL Elevation 2190
Log Measured From KELLY BUSHING 5' A.G.L.
Drilling Measured From KELLY BUSHING
Other Services
DILMEL
Elevation
K.B. 2195
D.F. 2193
G.L. 2190

Date	3/4/14	
Run Number	ONE	
Depth Driller	3626	
Depth Logger	3627	
Bottom Logged Interval	2603	
Top Log Interval	3100	
Casing Driller	8 5/8" @ 209	
Casing Logger	210	
Bit Size	7 7/8"	
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 2000 PPM
Density / Viscosity	9.3/55	
pH / Fluid Loss	10.5/6.8	
Source of Sample	FLOWLINE	
Rm @ Meas. Temp	1.90 @ 66F	
Rmt @ Meas. Temp	1.43 @ 66F	
Rmc @ Meas. Temp	2.28 @ 66F	
Source of Rmf / Rmc	MEASUREMENT	
Rm @ BHT	1.11 @ 113F	
Time Circulation Stopped	2 HOURS	
Time Logger on Bottom		
Maximum Recorded Temperature	113F	
Equipment Number	4010	
Location	HAYS, KANSAS	
Recorded By	JEFF GRONIEWEG	
Witnessed By	HERB DEINES	

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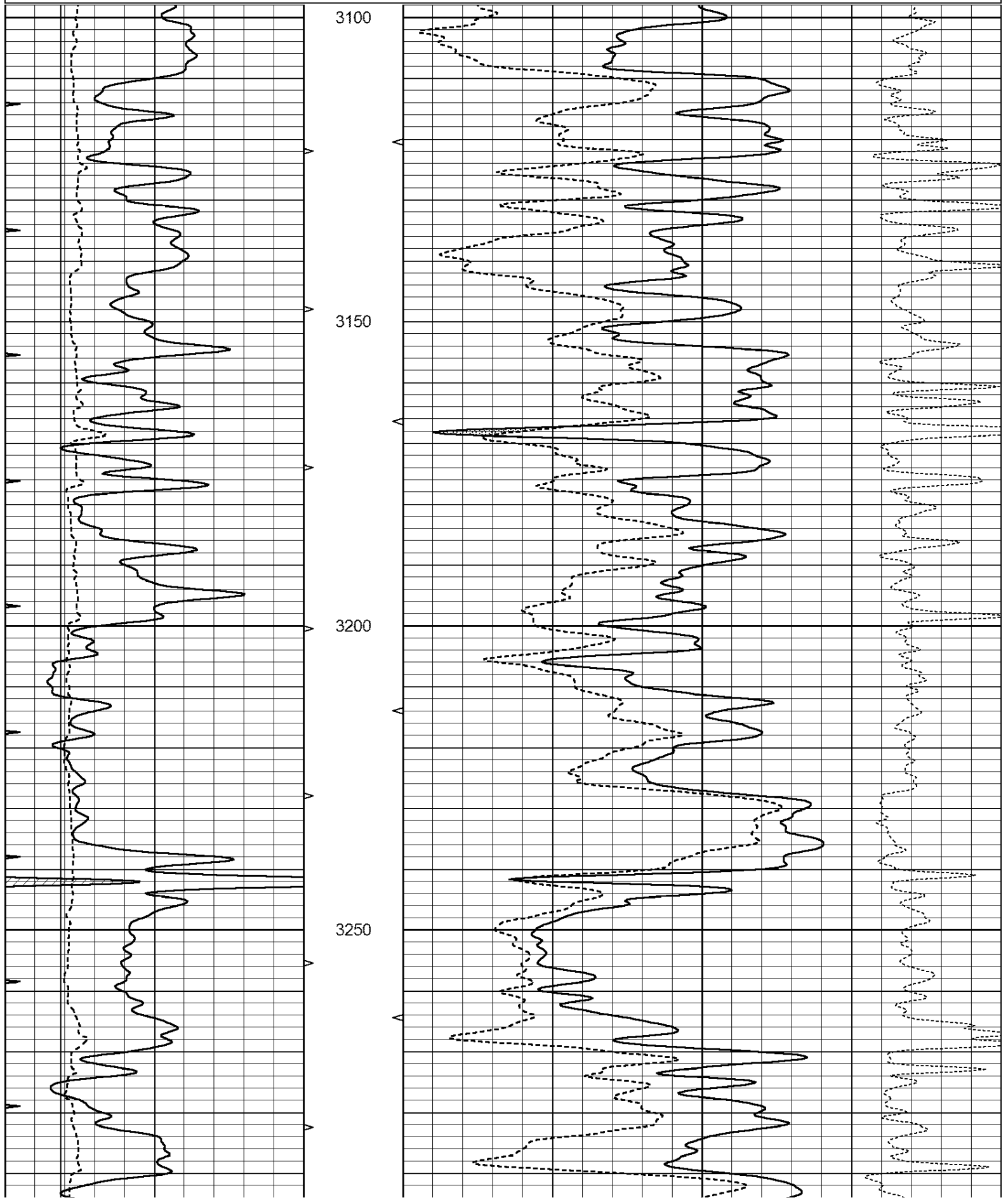
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

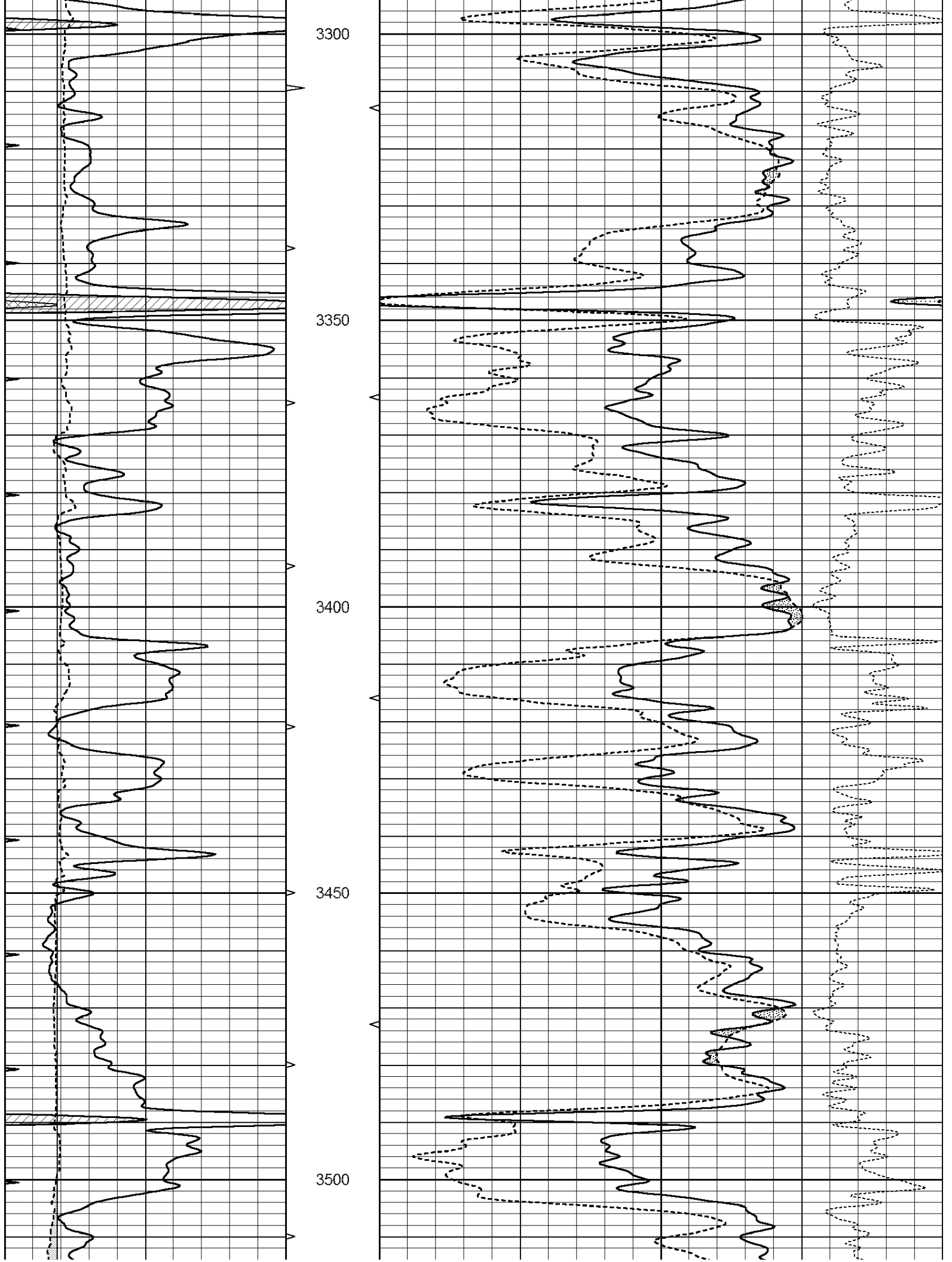
Comments

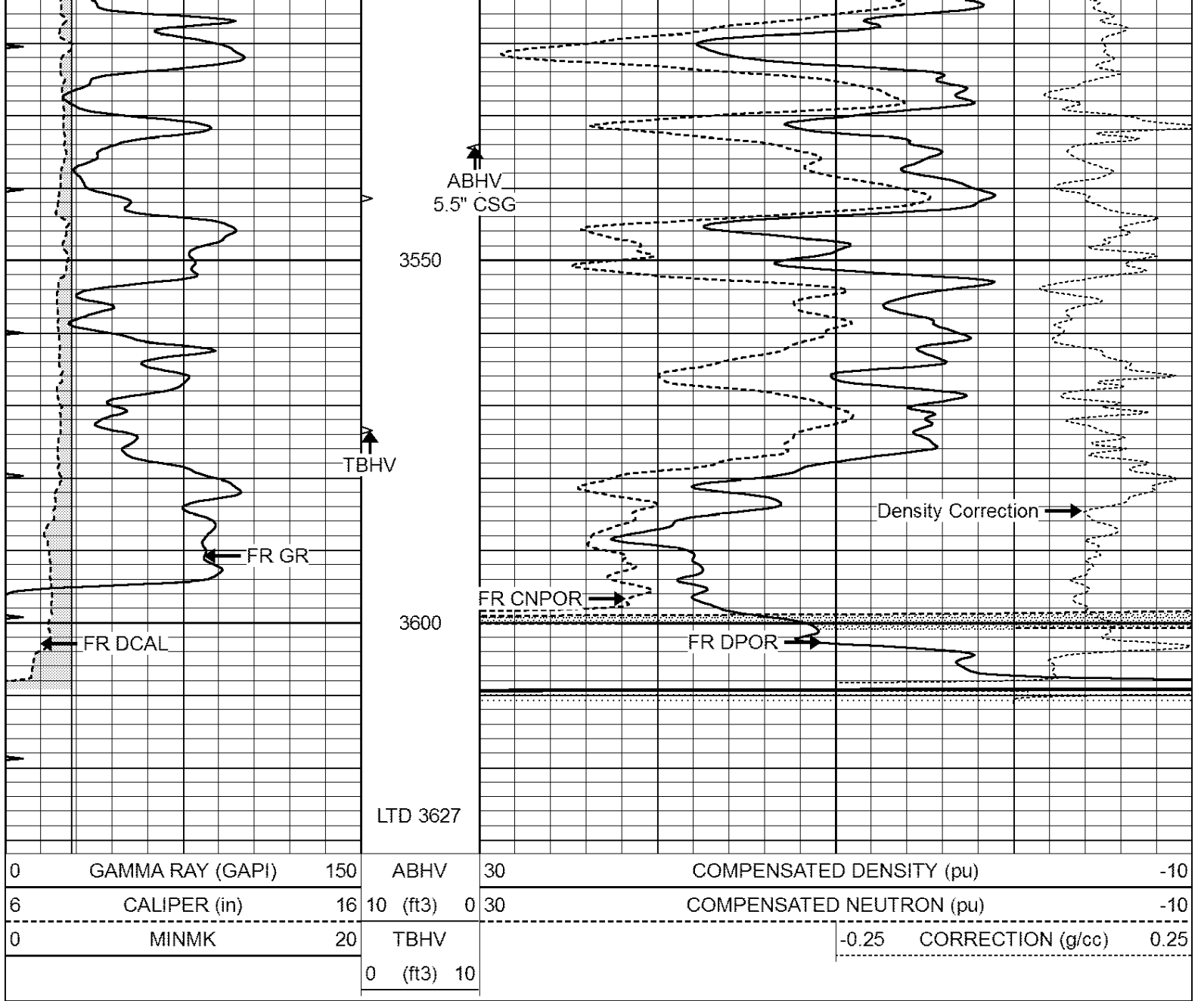
THANK YOU FOR USING NABORS, HAYS, KS. (785) 628-6395
DIRECTIONS:
LOGAN, KS - WEST TO NORTON/PHILLIPS COUNTY LINE - 2 MILES WEST TO RD E 12
3 MILES SOUTH TO CATTLE GUARDS - EAST & SOUTH INTO

Database File: 24005ddn.db
Dataset Pathname: pass4.2
Presentation Format: den_neu
Dataset Creation: Tue Mar 04 19:05:22 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		



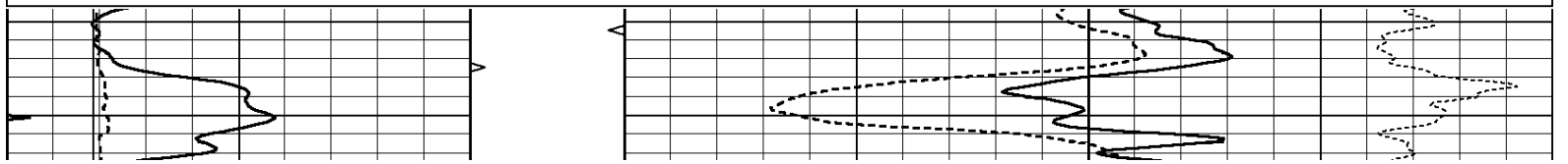


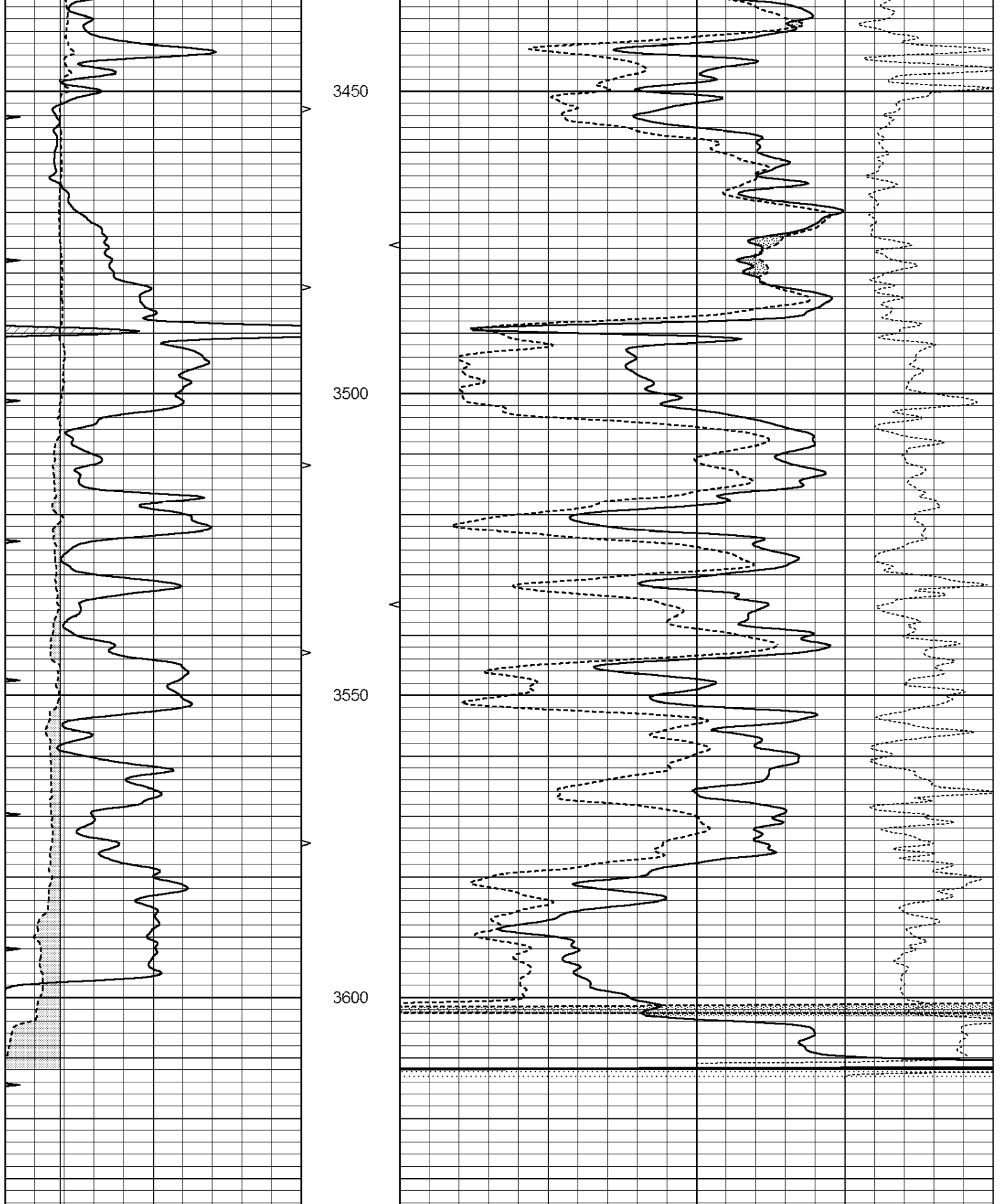


REPEAT SECTION

Database File: 24005ddn.db
 Dataset Pathname: pass3.3
 Presentation Format: den_neu
 Dataset Creation: Tue Mar 04 19:07:40 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		





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: 24005ddn.db
 Dataset Pathname: pass4.2
 Dataset Creation: Tue Mar 04 19:05:22 2014 by Calc Open-Cased 090629

Dual Induction Calibration Report

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

Loop:	Readings			References			Results	
	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: GEAR3-GEARHART
 Source / Verifier: 143 / 143
 Master Calibration Performed: Fri Jan 04 15:48:16 2013
 Before Survey Verification Performed:
 After Survey Verification Performed:

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	935.36	501.55	cps
Aluminum	2.580	g/cc	209.32	357.01	cps
Spine Angle = 77.21			Density/Spine Ratio = 0.567		
	Size		Reading		
Small Ring	8.00	in	4.29	V	
Large Ring	11.00	in	6.04	V	

Before Survey Verification		14.00		in		0.24		v	
		<u>Target</u>				<u>Measured</u>			
		g/cc				g/cc			
		g/cc				g/cc			
		g/cc				g/cc			

After Survey Verification		14.00		in		0.24		v	
		<u>Target</u>				<u>Measured</u>			
		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:	Fri Nov 29 08:34:37 2013
Calibrator Value:	150.0
	GAPI
Background Reading:	0.0
Calibrator Reading:	276.0
	cps
	cps
Sensitivity:	0.6535
	GAPI/cps