



**SUPERIOR**  
Hays,  
Kansas

**COMPENSATED  
DENSITY/NEUTRON  
LOG**

Company MULL DRILLING CO. INC.  
Well LILA #1-12  
Field WC  
County LANE  
State KANSAS

Company MULL DRILLING COMPANY, INC.  
Well LILA #1-12  
Field WC  
County LANE State KANSAS

Location: API # : 15-101-22150-0000  
NE/4 NE/4  
1178'FNL & 339'FEL  
SEC 12 TWP 18S RGE 28W  
Permanent Datum GROUND LEVEL Elevation 2709  
Log Measured From KELLY BUSHING 5' A.G.L.  
Drilling Measured From KELLY BUSHING  
Other Services  
DIL  
MEL/SONIC  
Elevation  
K.B. 2714  
D.F.  
G.L. 2709

Date	12 FEB 09		
Run Number	ONE		
Depth Driller	4645		
Depth Logger	4640		
Bottom Logged Interval	4617		
Top Log Interval	3700		
Casing Driller	8 5/8 @ 232'		
Casing Logger	232		
Bit Size	7 7/8		
Type Fluid In Hole	CHEMICAL MUD		
Density / Viscosity	9.6/57	CHLORIDES 2300	
pH / Fluid Loss	8.5/11.2		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.1 @ 75		
Rmf @ Meas. Temp	1.0 @ 75		
Rmc @ Meas. Temp	1.2 @ 75		
Source of Rmf / Rmc	CAL/CAL		
Rm @ BHT	0.8 @ 111		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	0630		
Maximum Recorded Temperature	111		
Equipment Number	680		
Location	HAYS, KS		
Recorded By	DUGAN DENTON		
Witnessed By	PHIL ASKEY		

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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.

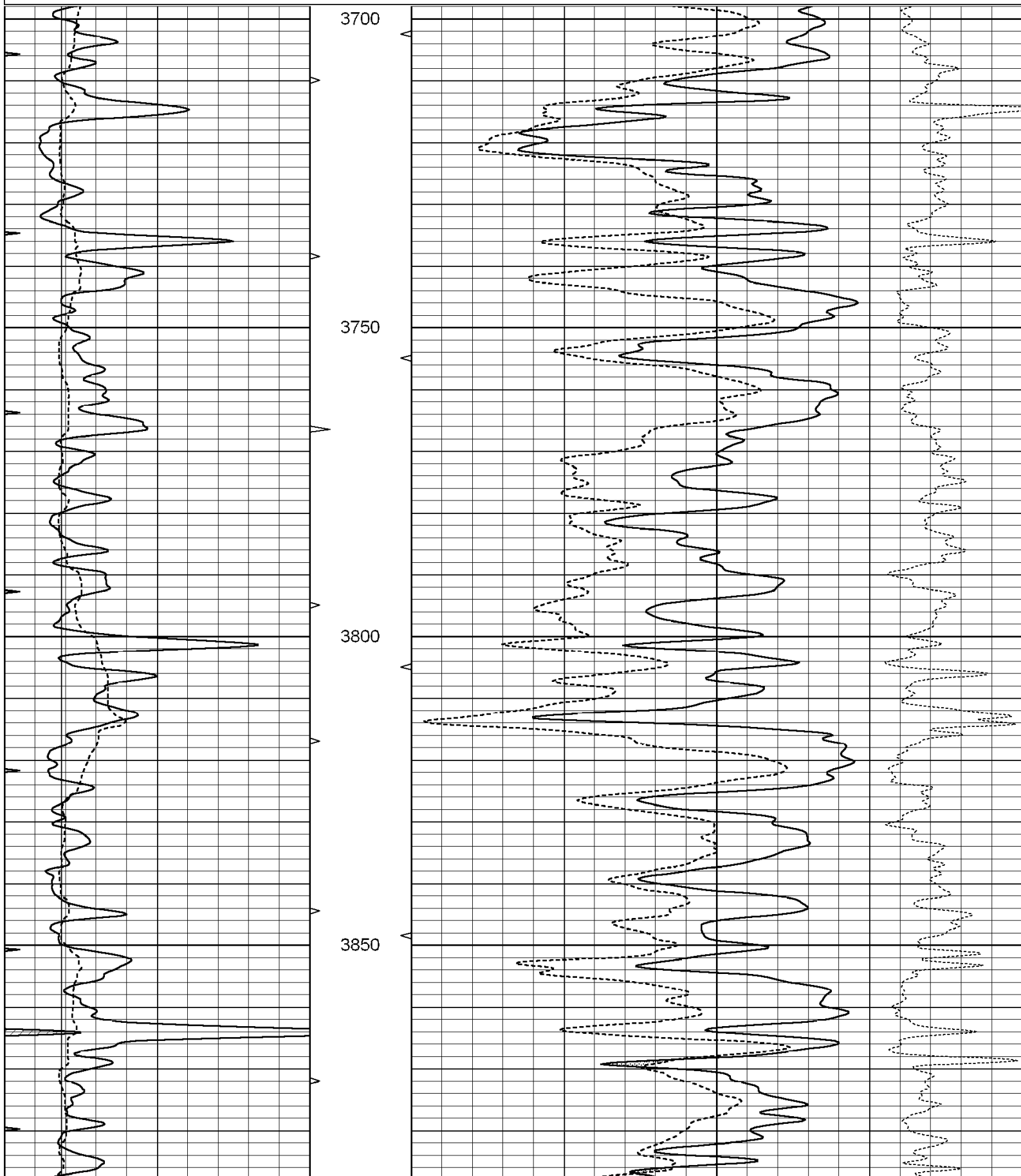
**Comments**

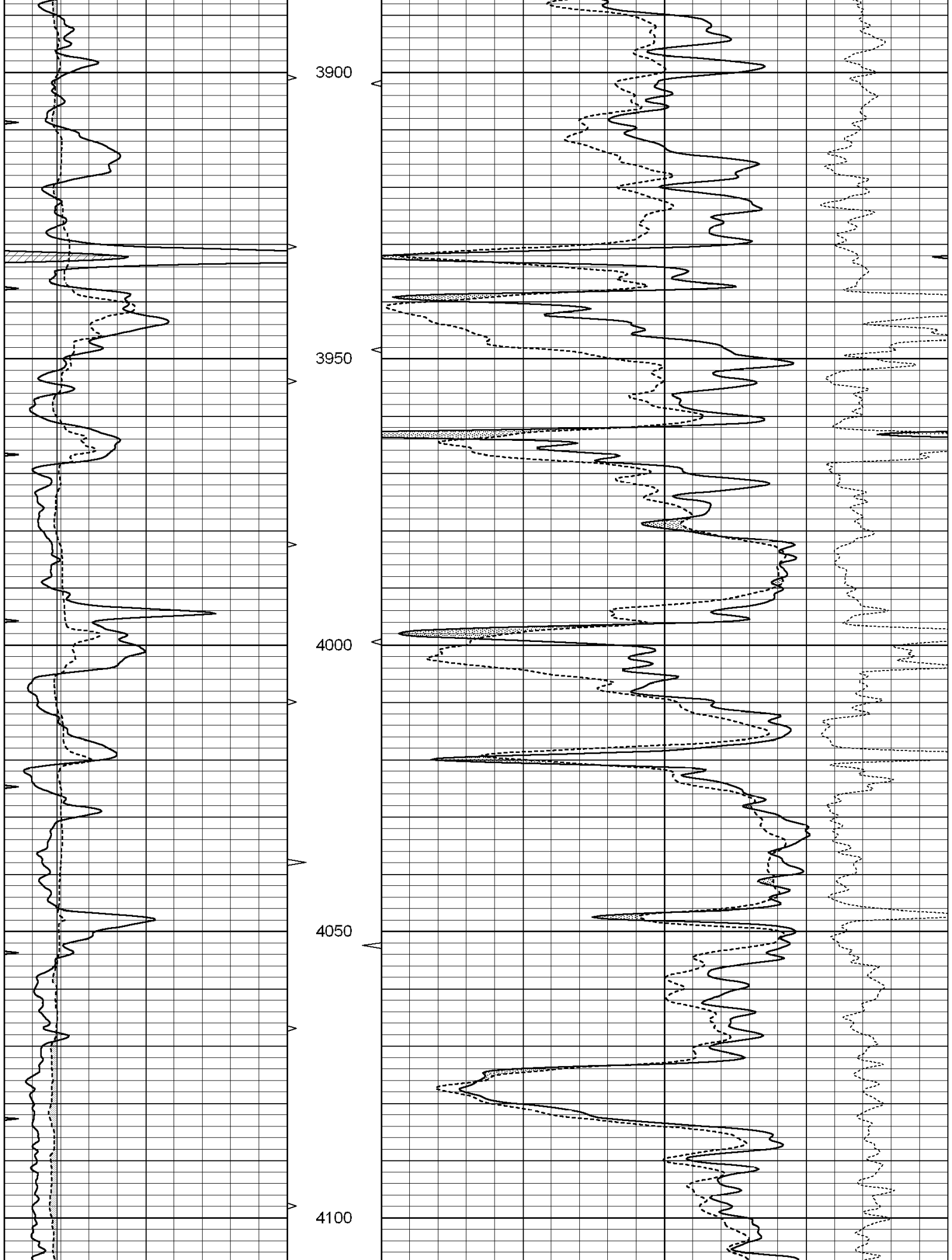
THANK YOU FOR USING SUPERIOR WELL SERVICES  
HAYS, KS. 785-628-6395  
  
DIRECTIONS: DIGHTON; 5 EAST TO PAWNEE RD, 2 NORTH, 1 EAST INTO

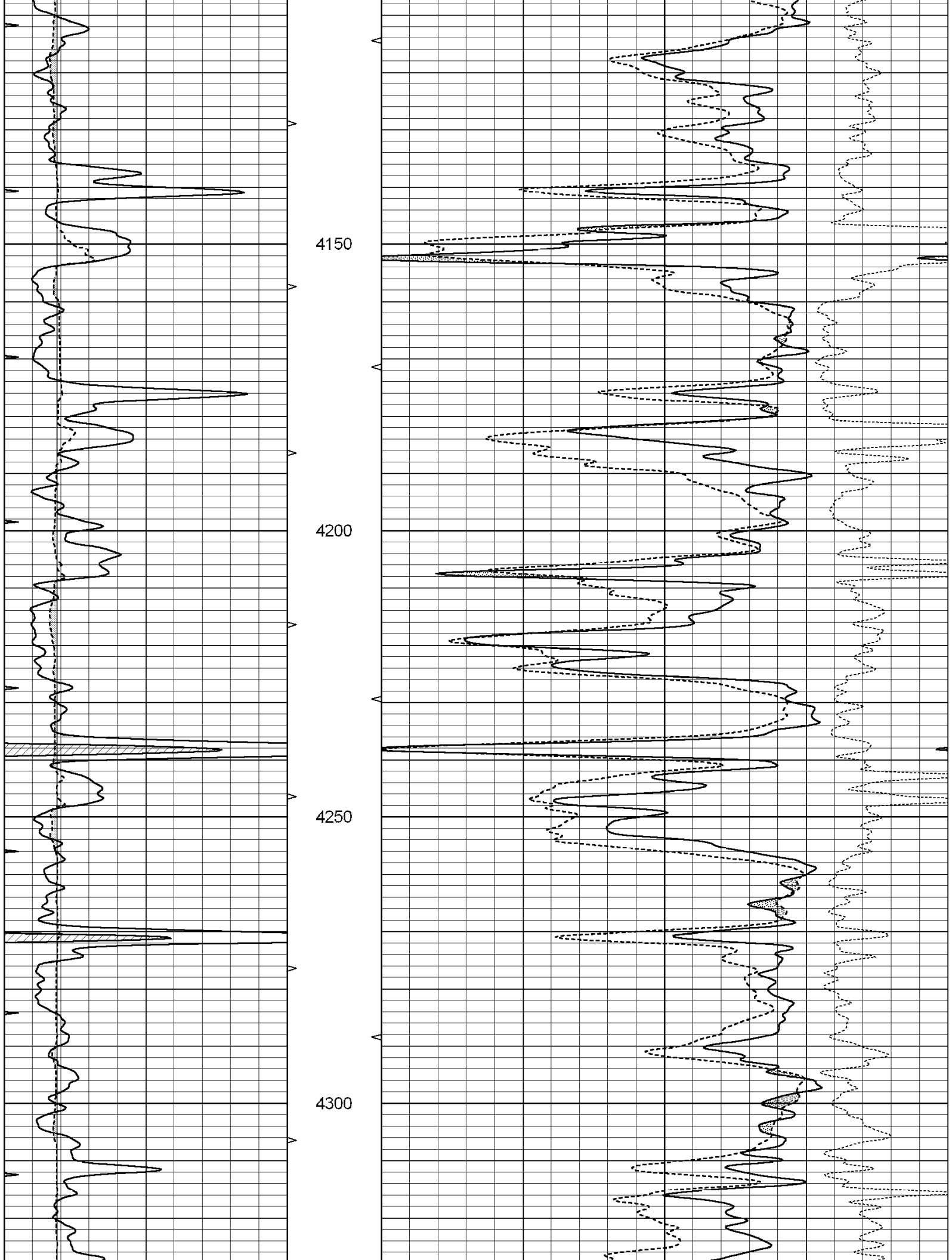
Charted by:

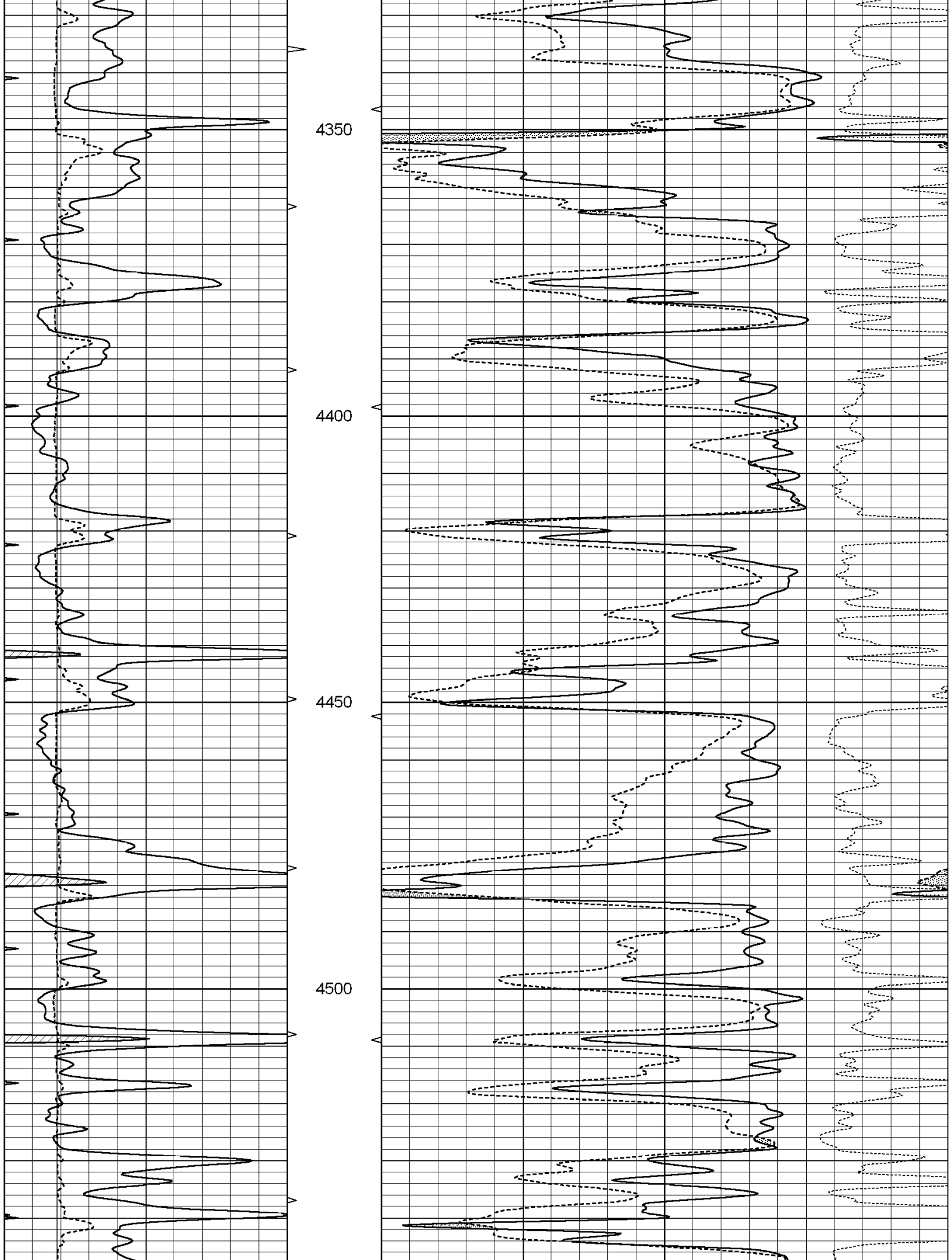
Depth in Feet scaled 1:240

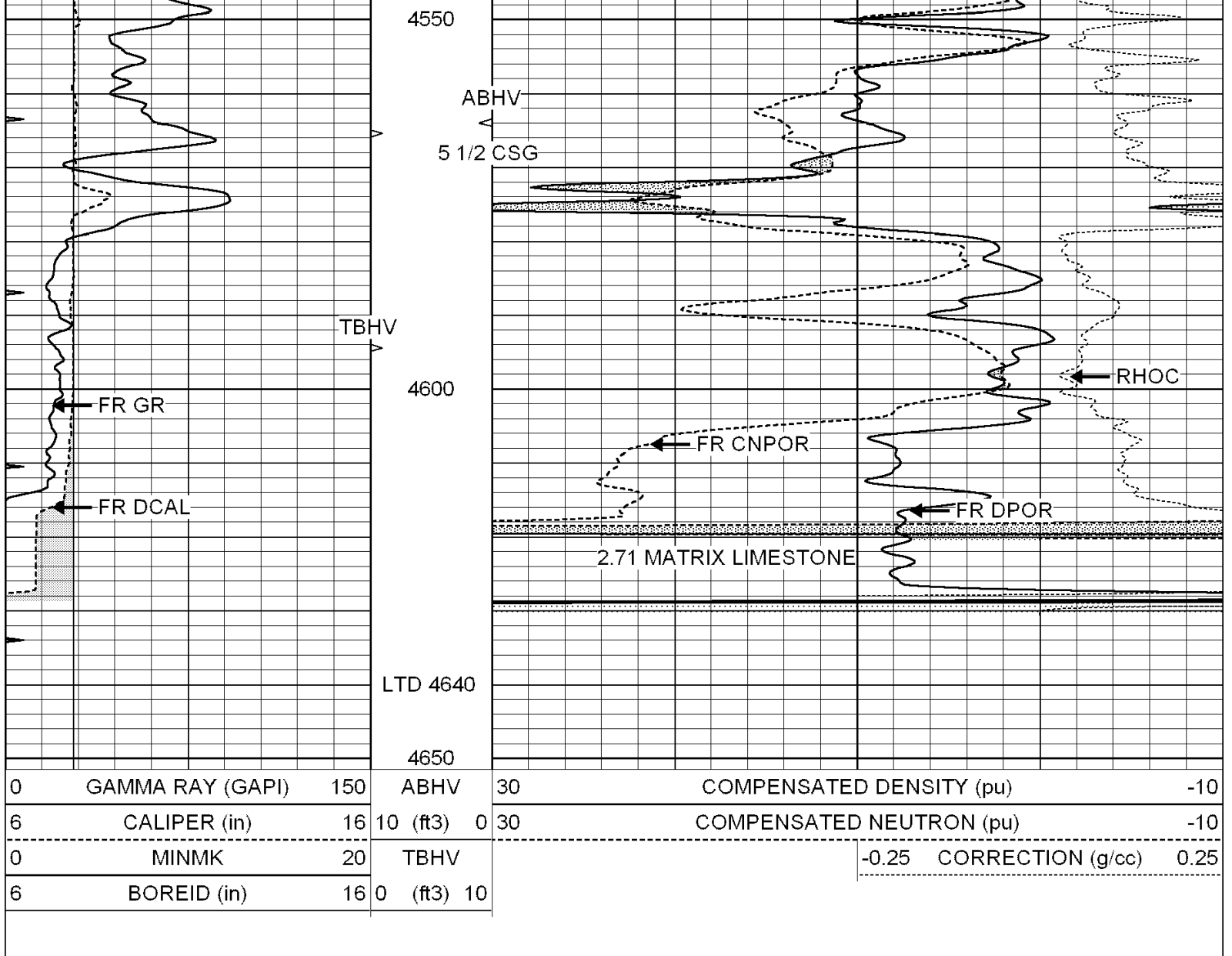
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV		-0.25 CORRECTION (g/cc)	0.25
6	BOREID (in)	16	0 (ft3)	10		









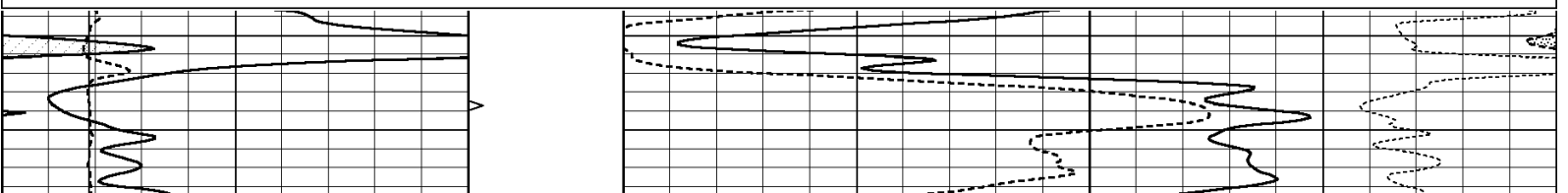


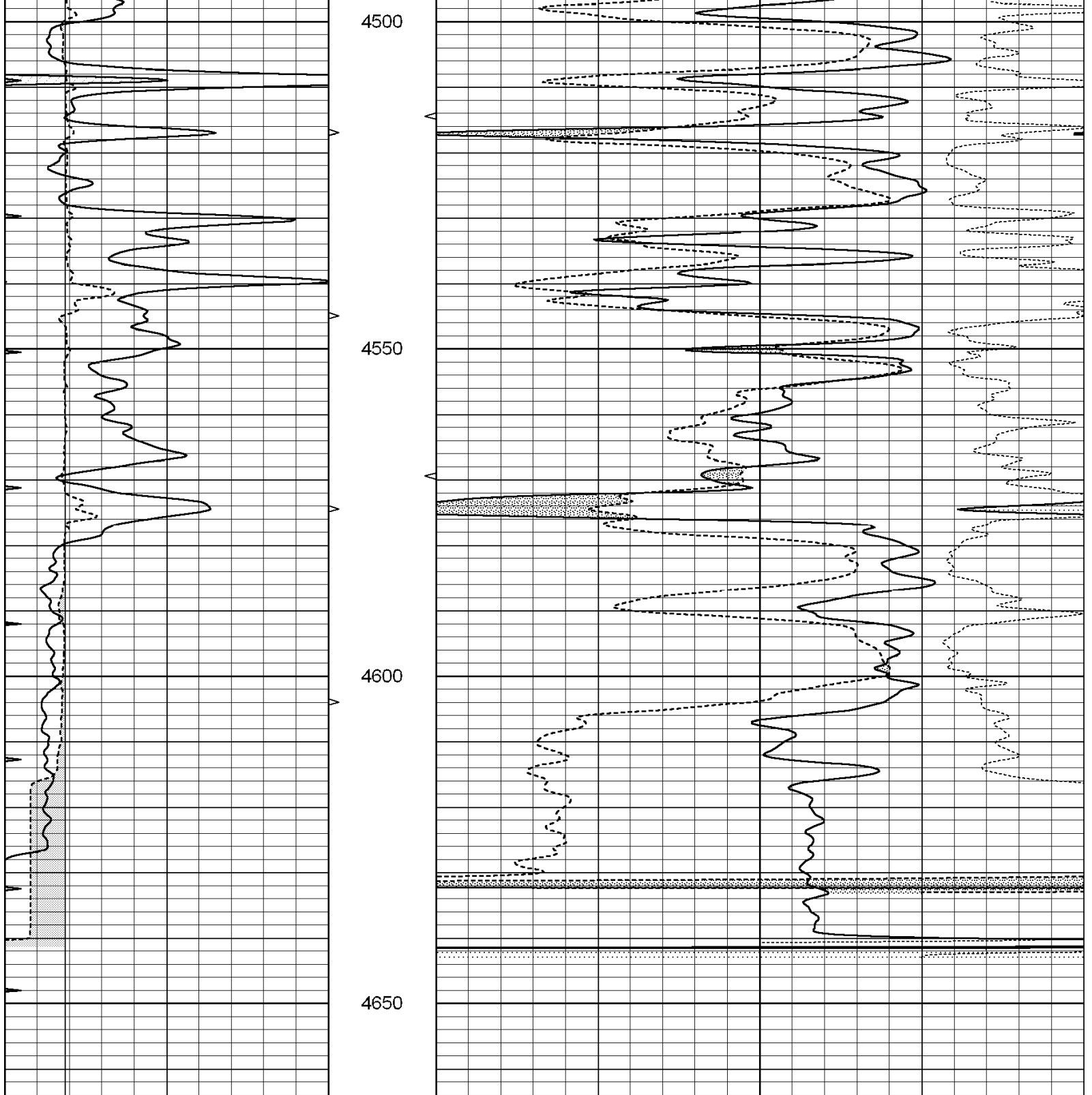
SUPERIOR  
Hays,  
Kansas

# REPEAT SECTION

Database File: 3192mulldrill.db  
 Dataset Pathname: pass2.1  
 Presentation Format: \_den\_neu  
 Dataset Creation: Thu Feb 12 06:36:00 2009 by Calc Open-Cased 070814  
 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
6	BOREID (in)	16	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
6	BOREID (in)	16	0 (ft3)	10				

Calibration Report

Database File: 3192mulldrill.db  
 Dataset Pathname: pass2.1  
 Dataset Creation: Thu Feb 12 06:36:00 2009 by Calc Open-Cased 070814

Serial-Model:  
 Surface Cal Performed:  
 Downhole Cal Performed:  
 After Survey Verification Performed:

PROBE8-DILG  
 Fri Aug 01 06:33:19 2008  
 Mon Jul 28 11:08:27 2008  
 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		
		-6.500	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:  
 Source / Verifier:  
 Master Calibration Performed:

GEAR4-GEARHART  
 143 / 143  
 Fri Jan 16 10:06:35 2009

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	1358.55	649.93	cps
Aluminum	2.580	g/cc	325.11	479.52	cps
Spine Angle = 78.00			Density/Spine Ratio = 0.595		
	Size		Reading		
Small Ring	8.00	in	3.56	V	
Large Ring	14.00	in	6.65	V	

Compensated Neutron Calibration Report

Serial Number: 6I  
 Tool Model: G

CALIBRATION

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

### Gamma Ray Calibration Report

Serial Number:	GR6	
Tool Model:	OPEN	
Performed:	Mon Feb 09 12:32:10 2009	
Calibrator Value:	150.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	351.0	cps
Sensitivity:	0.4274	GAPI/cps