



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

COMPENSATED DENSITY / NEUTRON LOG

Company	L.D. DRILLING, INC.	Company	L.D. DRILLING, INC.
Well	#1-7 CASEY	Well	#1-7 CASEY
Field	WILDCAT	Field	WILDCAT
County	CHEYENNE	County	CHEYENNE
State	KANSAS	State	KANSAS
Location:	API # : 15-023-21427-0000 1783' FSL & 330' FWL	Other Services	DIL/MEL
Permanent Datum	GROUND LEVEL	Elevation	3246
Log Measured From	KELLY BUSHING 5' A.G.L.	K.B.	3251
Drilling Measured From	KELLY BUSHING	D.F.	3249
		G.L.	3246
Date	5/21/15		
Run Number	ONE		
Depth Driller	4951		
Depth Logger	4949		
Bottom Logged Interval	4925		
Top Log Interval	3700		
Casing Driller	8 5/8"@309'		
Casing Logger	305		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.2/53		
pH / Fluid Loss	11.0/8.0		
Source of Sample	FLOWLINE		
Rin @ Meas. Temp	1.50@90F		
Rinf @ Meas. Temp	1.13@90F		
Rinc @ Meas. Temp	1.80@90F		
Source of Rinf / Rinc	MEASUREMENT		
Rin @ BHT	1.08@125F		
Time Circulation Stopped	2.5 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	125F		
Equipment Number	4854		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		BLAKE WAGGONER
Witnessed By	KIM SHOEMAKER		

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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
BIRD CITY, KS., 10N. ON (HWY 161) TO "RD. X", 1/2E., 1/2S., 1E. INTO PASTURE

Database File:

26514ddn.db

Dataset Pathname:

pass3.3

Presentation Format:

den_neu

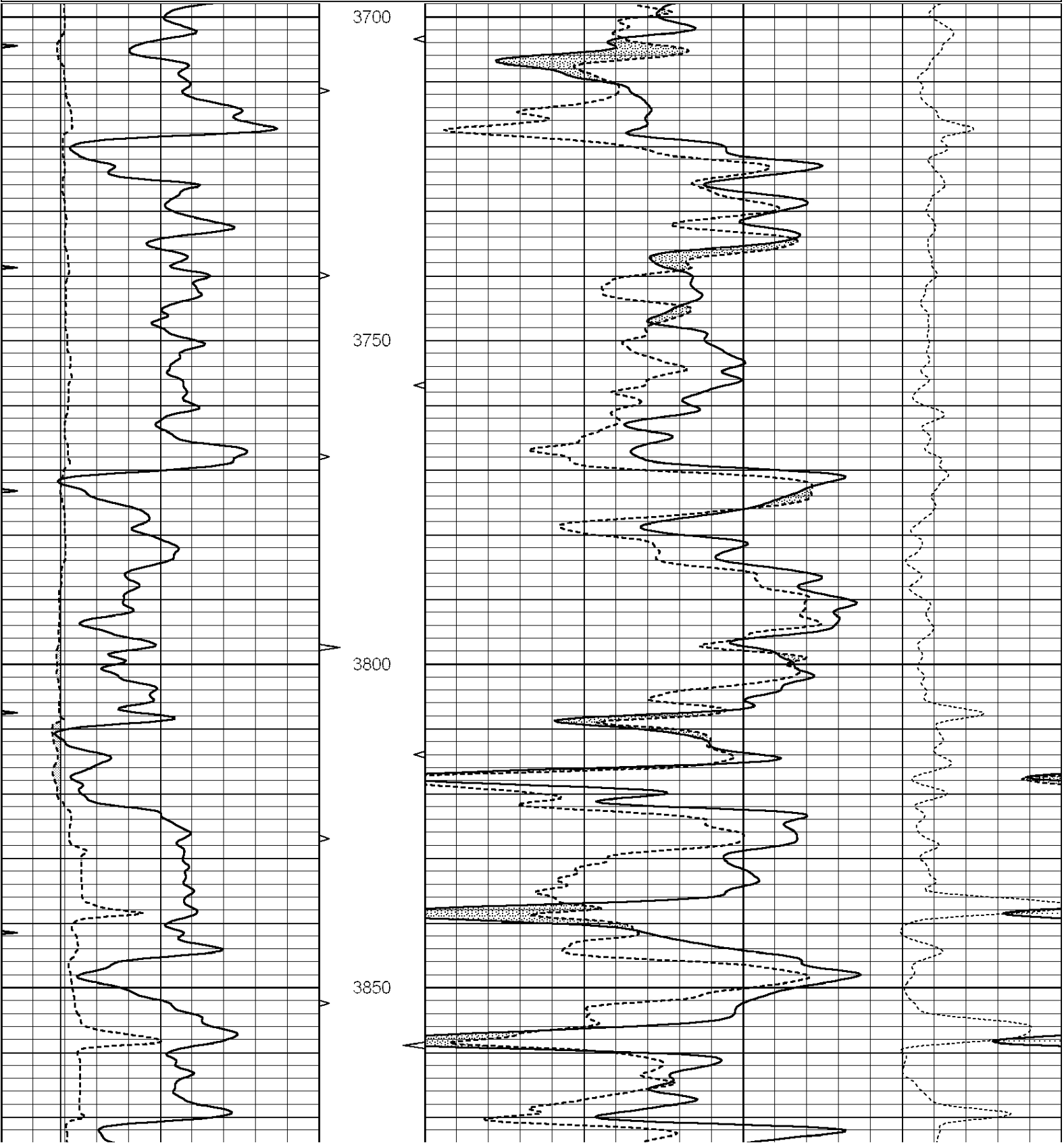
Dataset Creation:

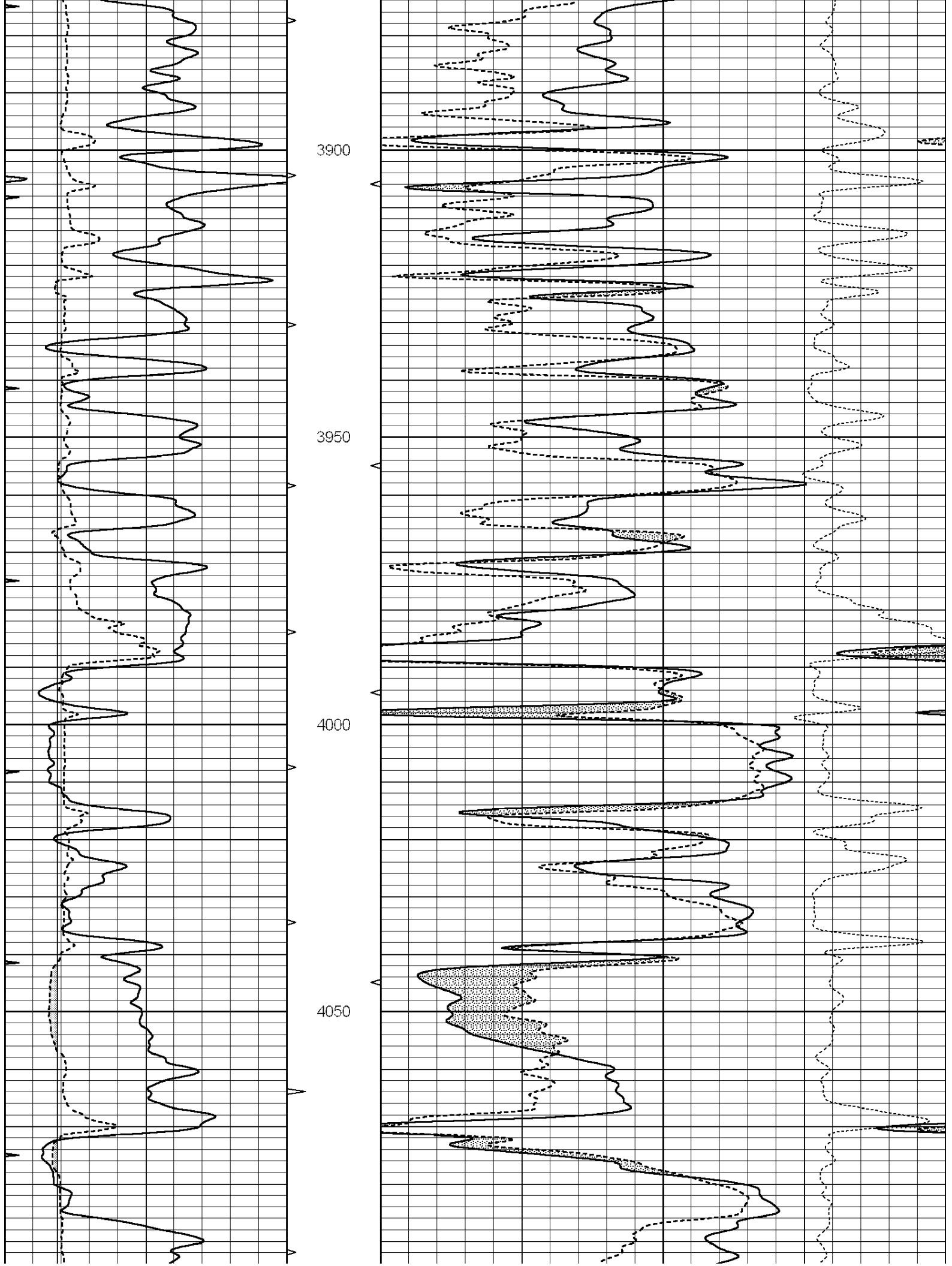
Thu May 21 10:34:40 2015 by Calc SOC 120430

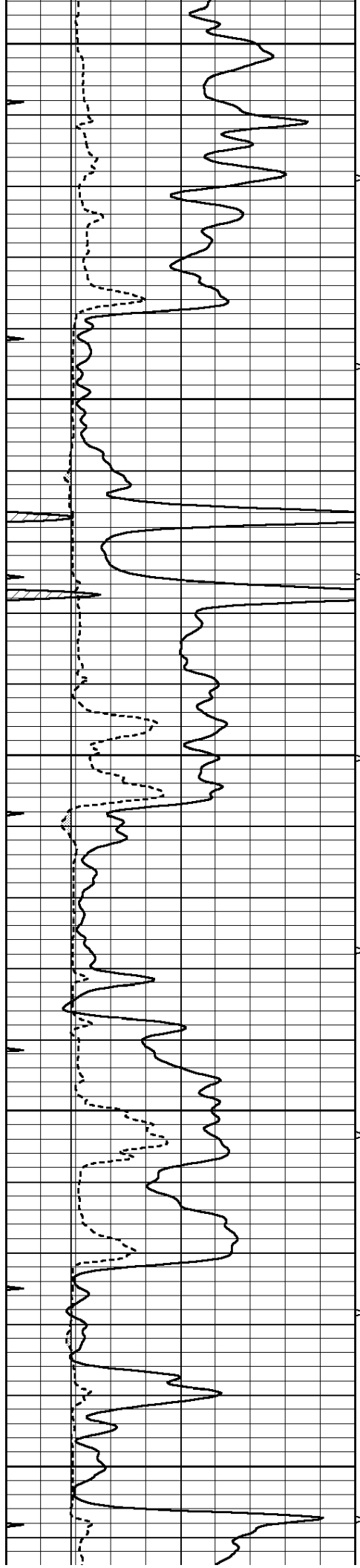
Charted by:

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







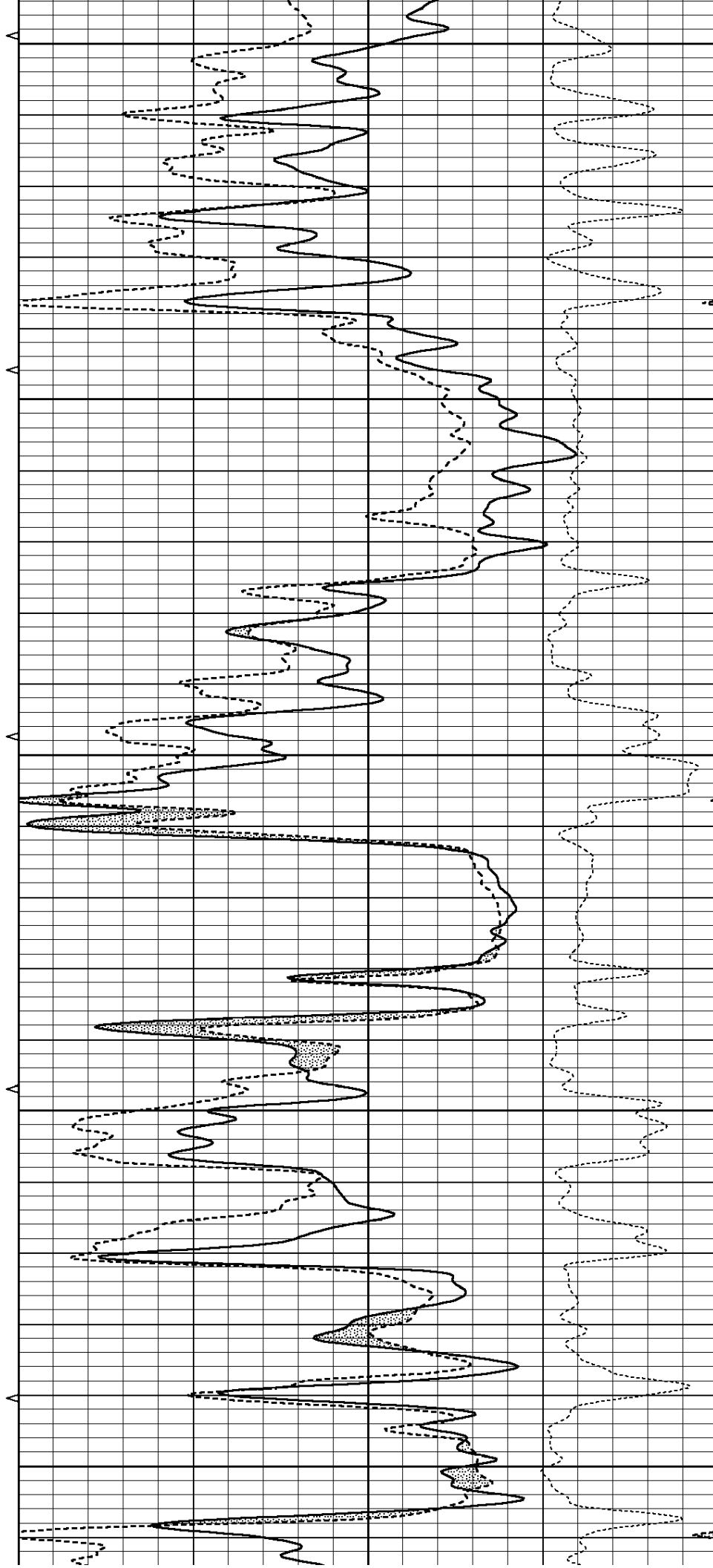
4100

4150

4200

4250

4300



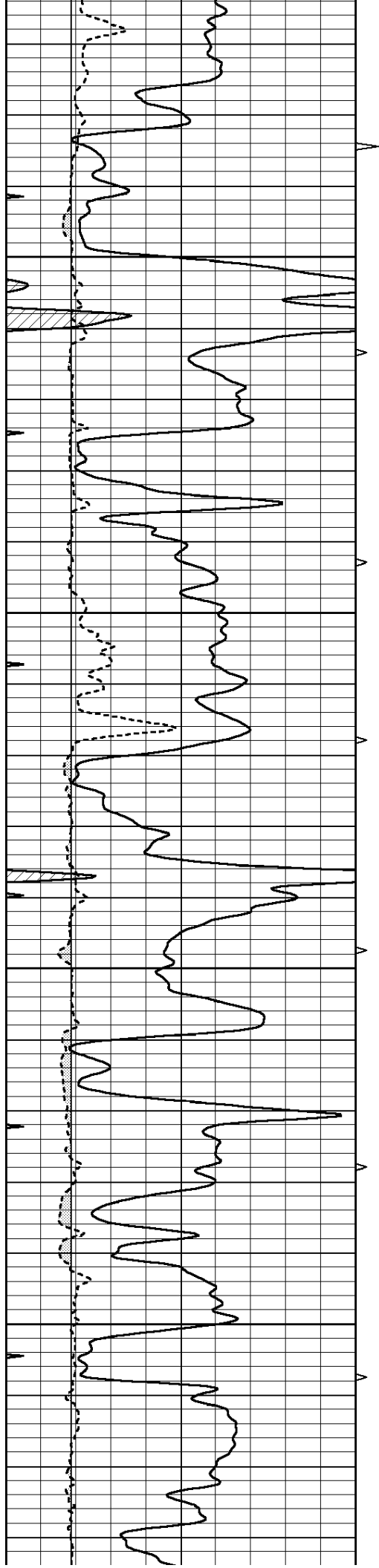
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4150

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4250

4300

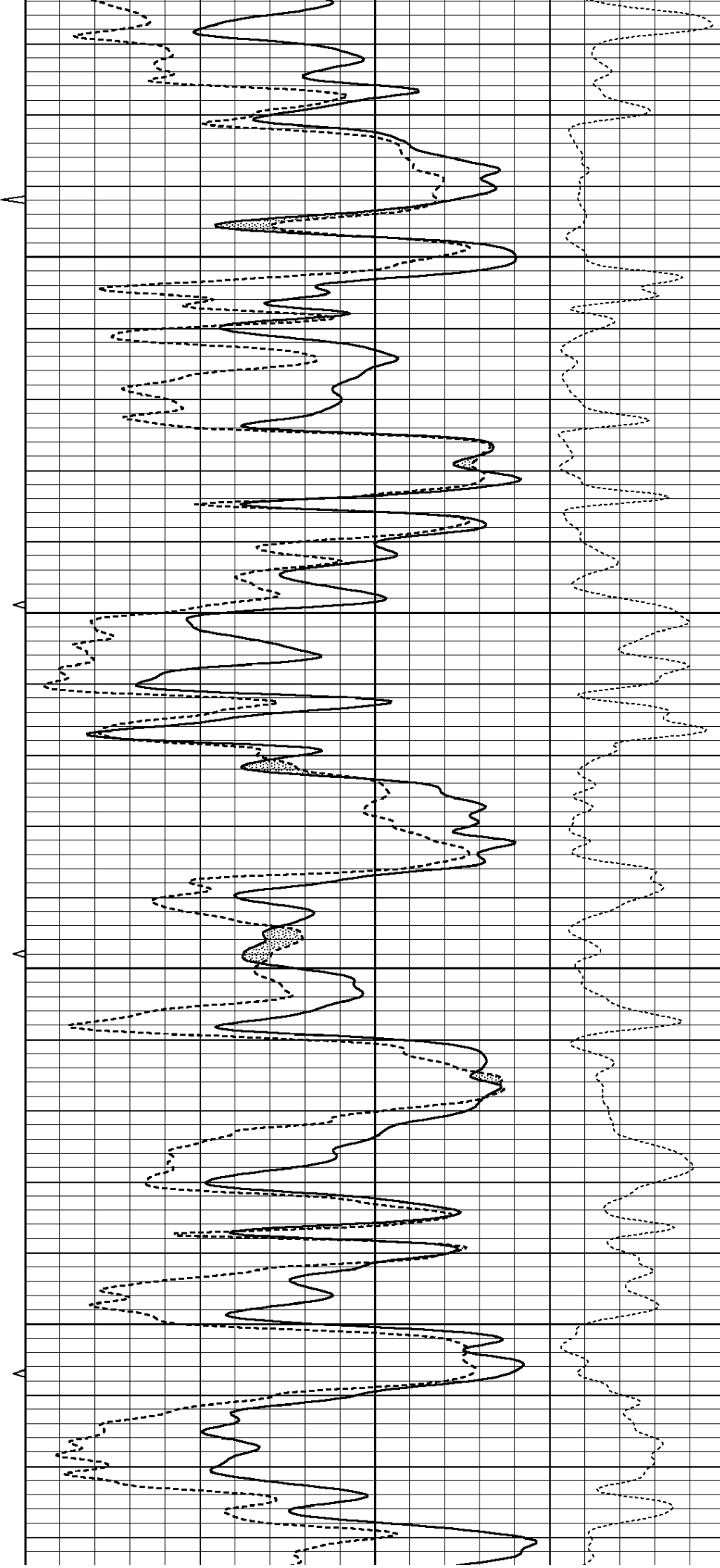


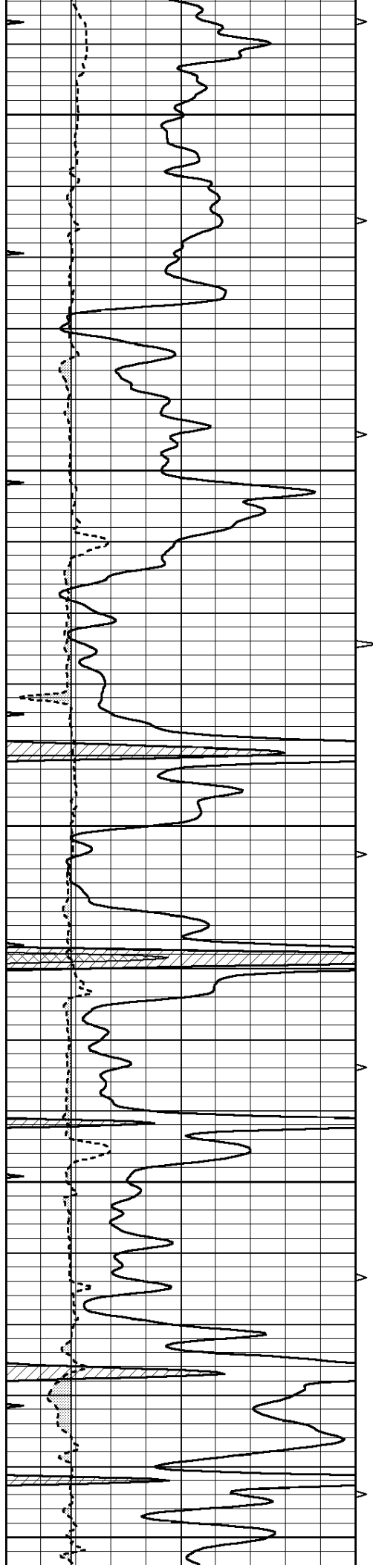
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4400

4450

4500





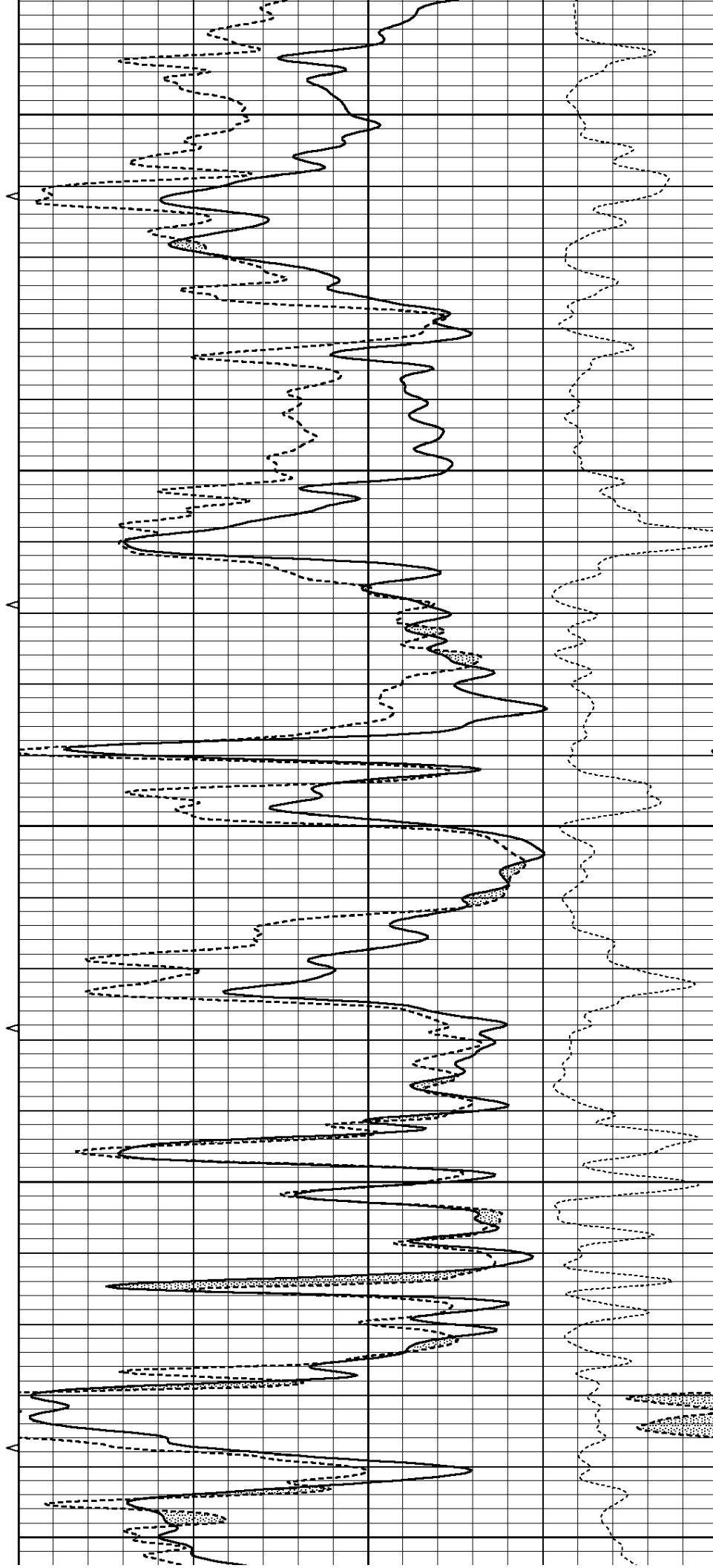
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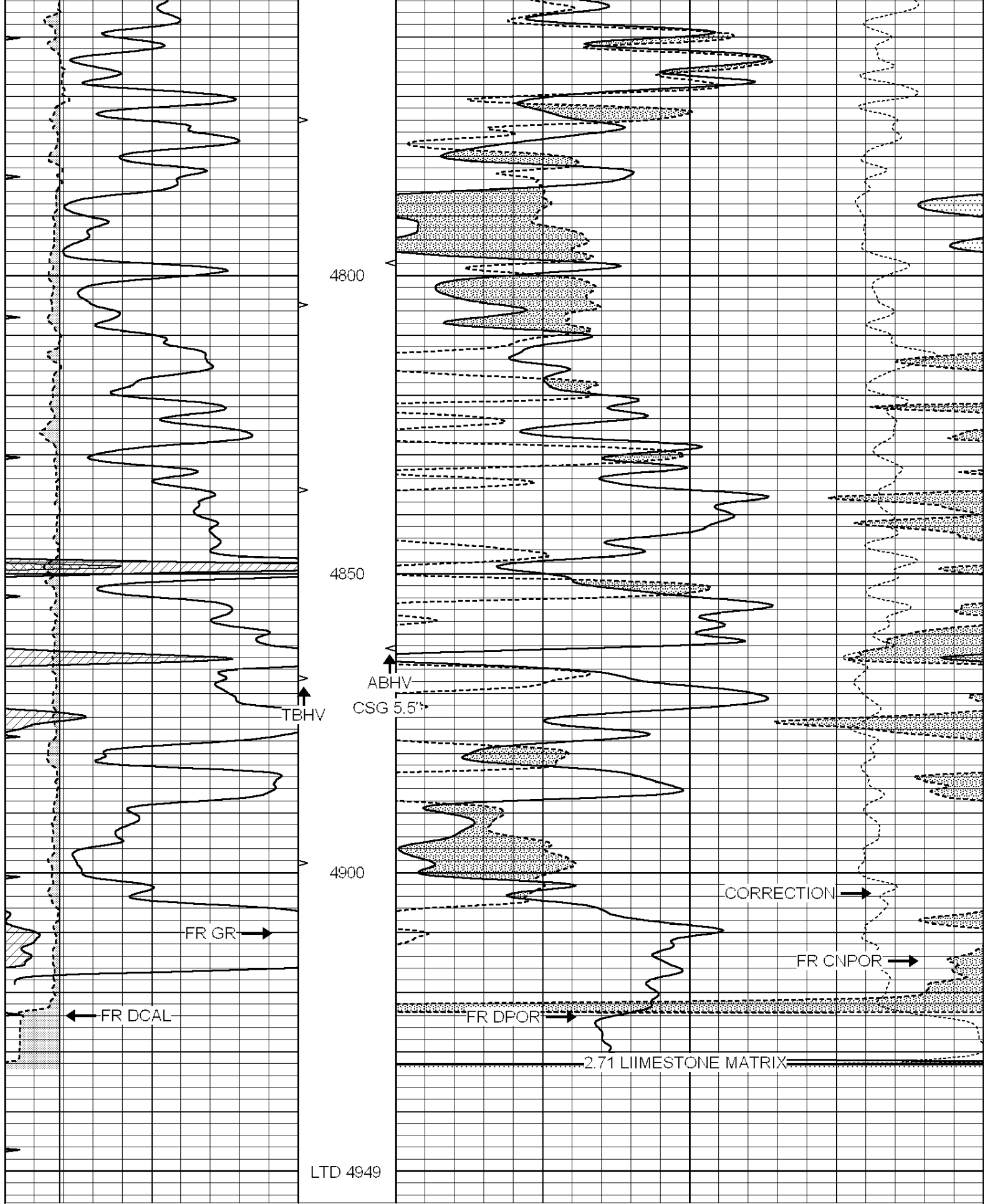
4600

4650

4700

4750





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		

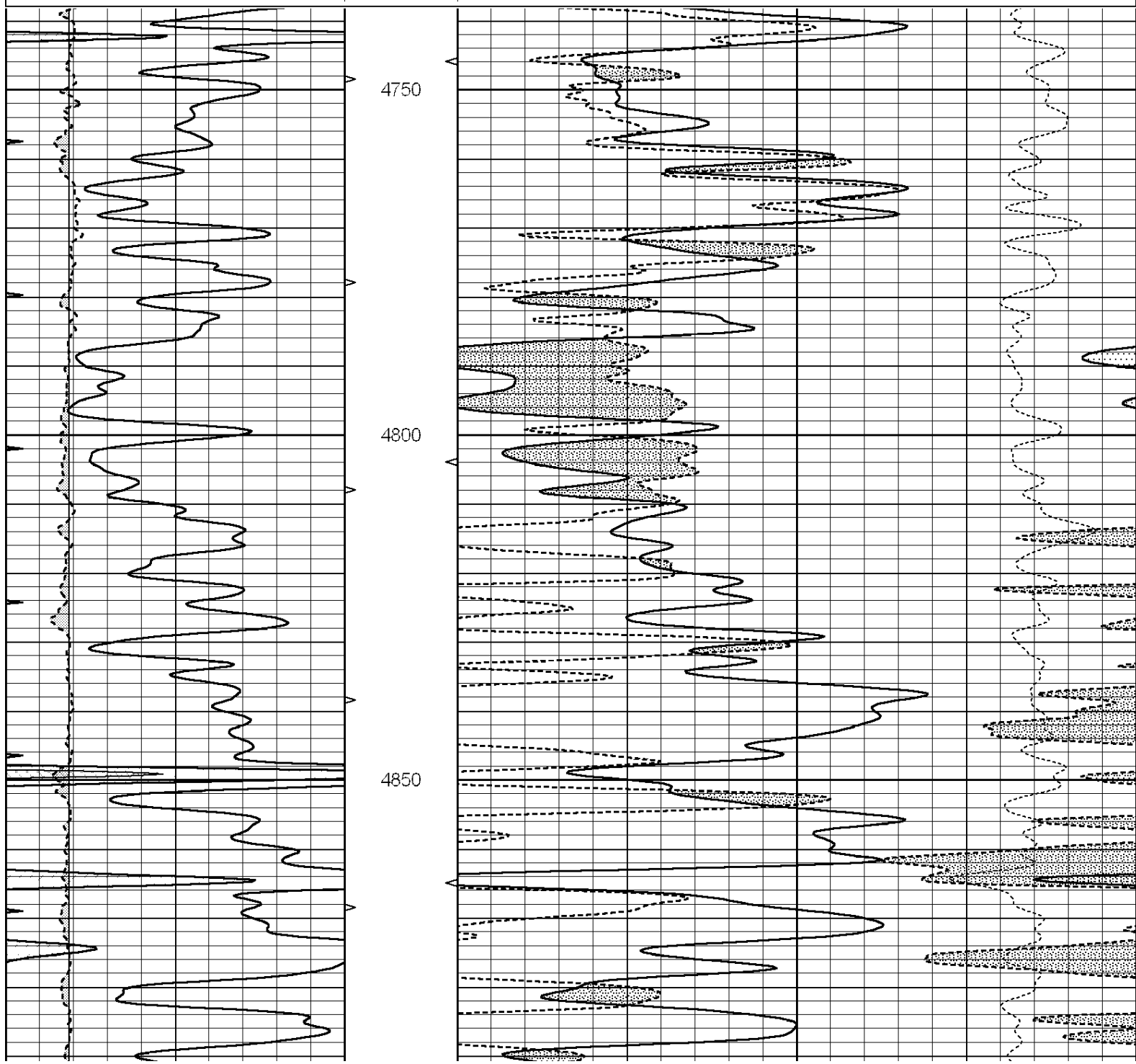


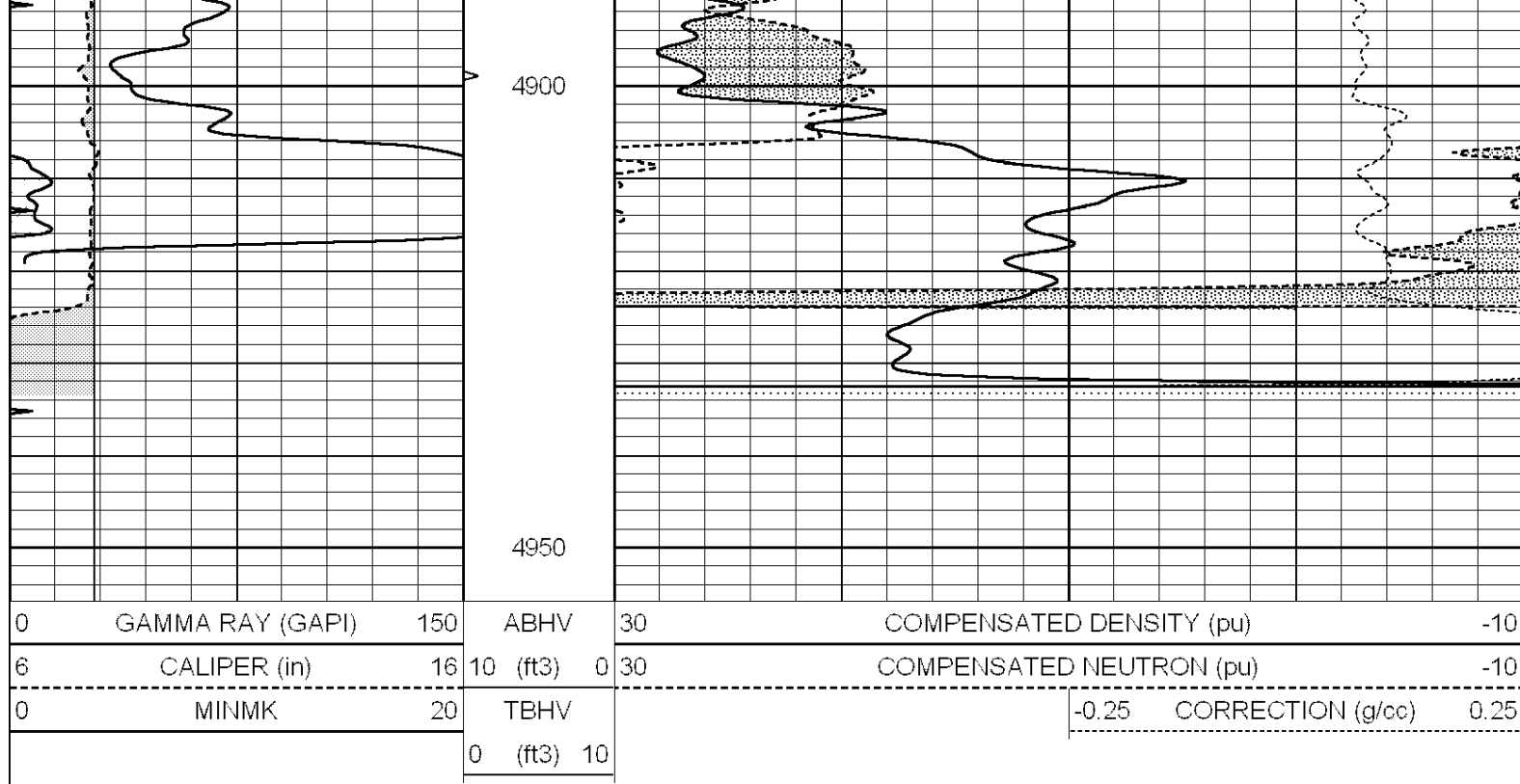
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REPEAT SECTION

Database File: 26514ddn.db
Dataset Pathname: pass2.3
Presentation Format: den_neu
Dataset Creation: Thu May 21 09:41:10 2015 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		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		





Calibration Report

Database File: 26514ddn.db
Dataset Pathname: pass3.3
Dataset Creation: Thu May 21 10:34:40 2015 by Calc SOC 120430

Dual Induction Calibration Report

Serial-Model: PROBE9-DILG
Surface Cal Performed: Mon May 04 16:08:03 2015
Downhole Cal Performed: Mon Jul 28 12:02:56 2008
After Survey Verification Performed: Mon Jul 28 12:02:56 2008

Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	670.000	-16.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	670.000	-28.000
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: 003N Model: PRB

Master Calibration			Performed Tue Sep 08 14:14:44 2009					
	Background		Magnesium		Aluminum		Sandstone	
Window 1	2042.6		12312.8		4225.8		13758.4	cps
Window 2	1855.8		10134.7		3624.2		11113.1	cps
Window 3	1639.4		6760.2		2716.3		7260.3	cps
Window 4	466.4		469.2		466.1		476.5	cps
Long Space	0.0		8278.9		1768.4		9257.4	cps
Short Space	2.2		2377.3		1544.1		2574.2	cps
Rho			1.7100		2.5900		1.3800	g/cc
Pe			0.0000		2.5700		1.5500	
Rib Angle	: 44.4		Rib Slope	: 0.979	Density/Spine Ratio			: 0.549
Spine Angle	: 74.4		Spine Slope	: 3.577	Spine Intercept			: -18.8

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	

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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:	070558		
Tool Model:	OPEN_GR		
Performed:	Sat Mar 21 17:40:37 2015		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.2600	GAPI/cps	