



**COMPLETION
& PRODUCTION
SERVICES CO.**

**COMPENSATED
DENSITY / NEUTRON
LOG**

Company BOW CREEK OIL COMPANY
Well WILHELM # 1-25
Field WILHELM
County RAWLINGS State KANSAS

Company BOW CREEK OIL COMPANY
Well WILHELM # 1-25
Field WILHELM
County RAWLINGS
State KANSAS

Location: API #: 15-153-21090-00-00
1193' FNL & 1439' FEL
SE - SE - NW - NE
SEC 25 TWP 1S RGE 33W
Permanent Datum GROUND LEVEL Elevation 3038
Log Measured From KELLY BUSHING 10' A.G.L.
Drilling Measured From KELLY BUSHING
Other Services
DILMEL
SON
Elevation
K.B. 3048
D.F. 3046
G.L. 3038

Date	1/15/15		
Run Number	ONE		
Depth Driller	4639		
Depth Logger	4640		
Bottom Logged Interval	4616		
Top Log Interval	3000		
Casing Driller	8 5/8 @ 300'		
Casing Logger	308'		
Bit Size	7.875		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.6/65	CHLORIDES 500 PPM	
pH / Fluid Loss	10.0/8.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.20 @ 79F		
Rmf @ Meas. Temp	0.90 @ 79F		
Rmc @ Meas. Temp	1.44 @ 79F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	0.79 @ 120F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	120F		
Equipment Number	3802		
Location	HAYS, KS.		
Recorded By	IAN MABB		
Witnessed By	LYLE HERRMAN		

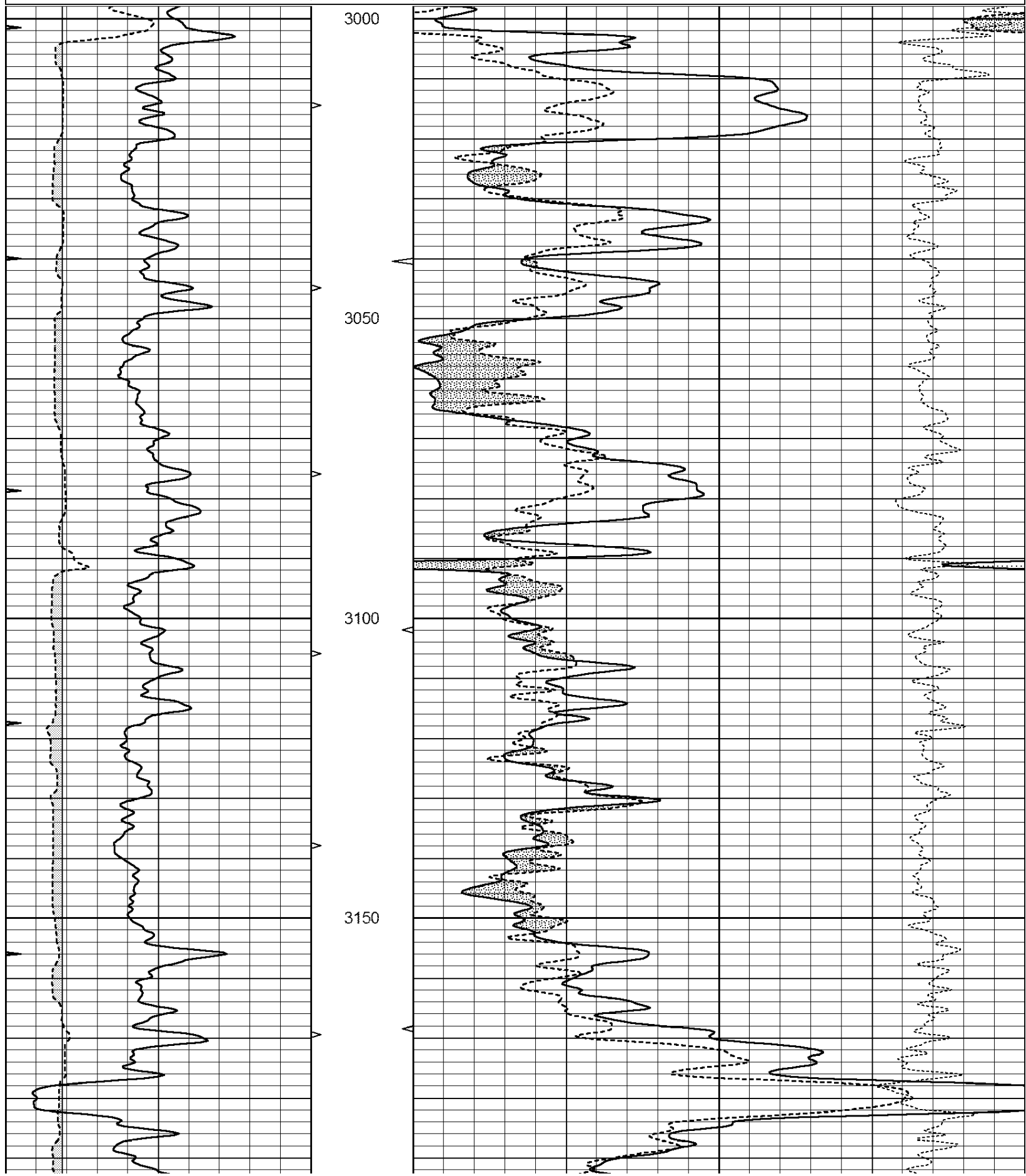
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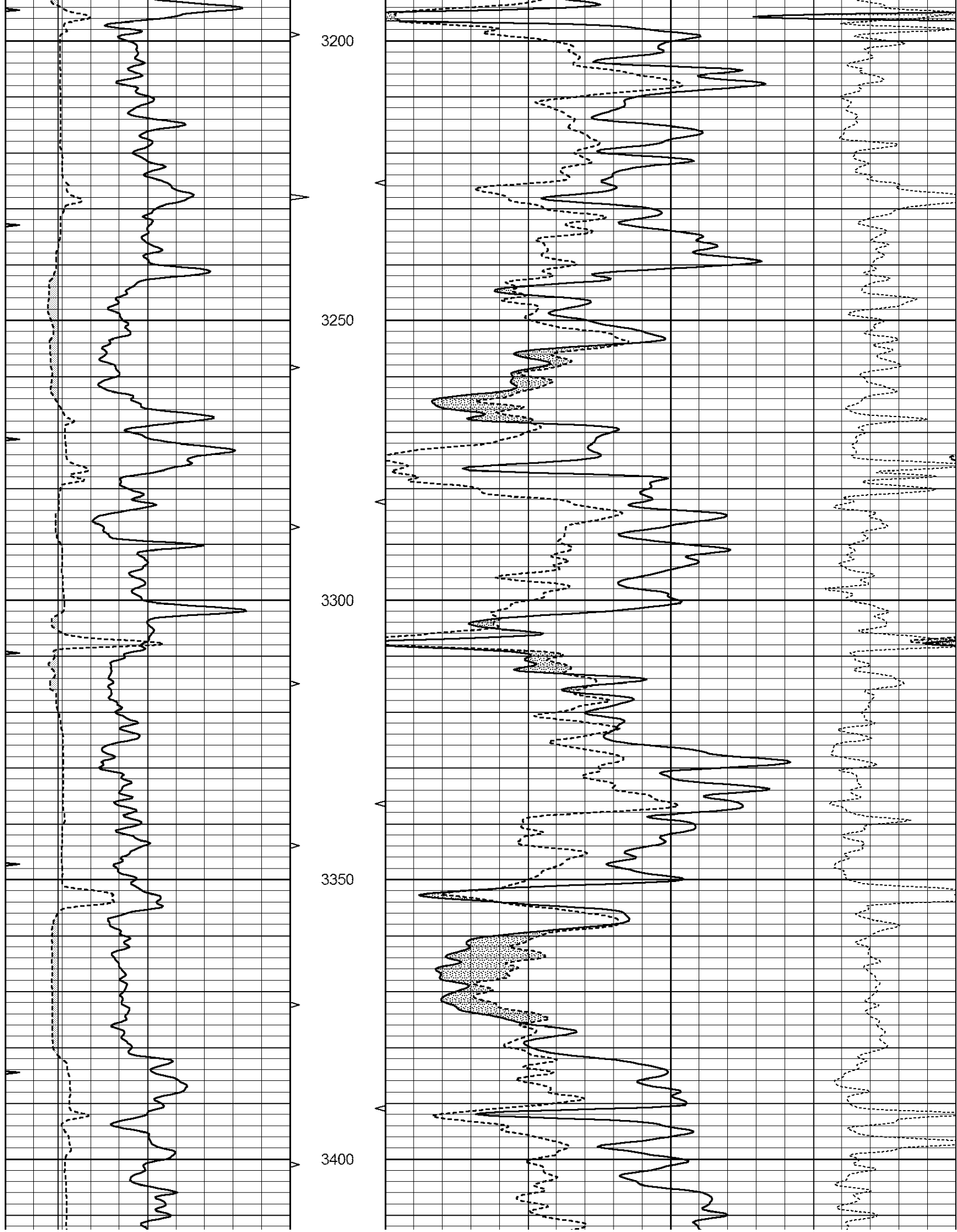
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

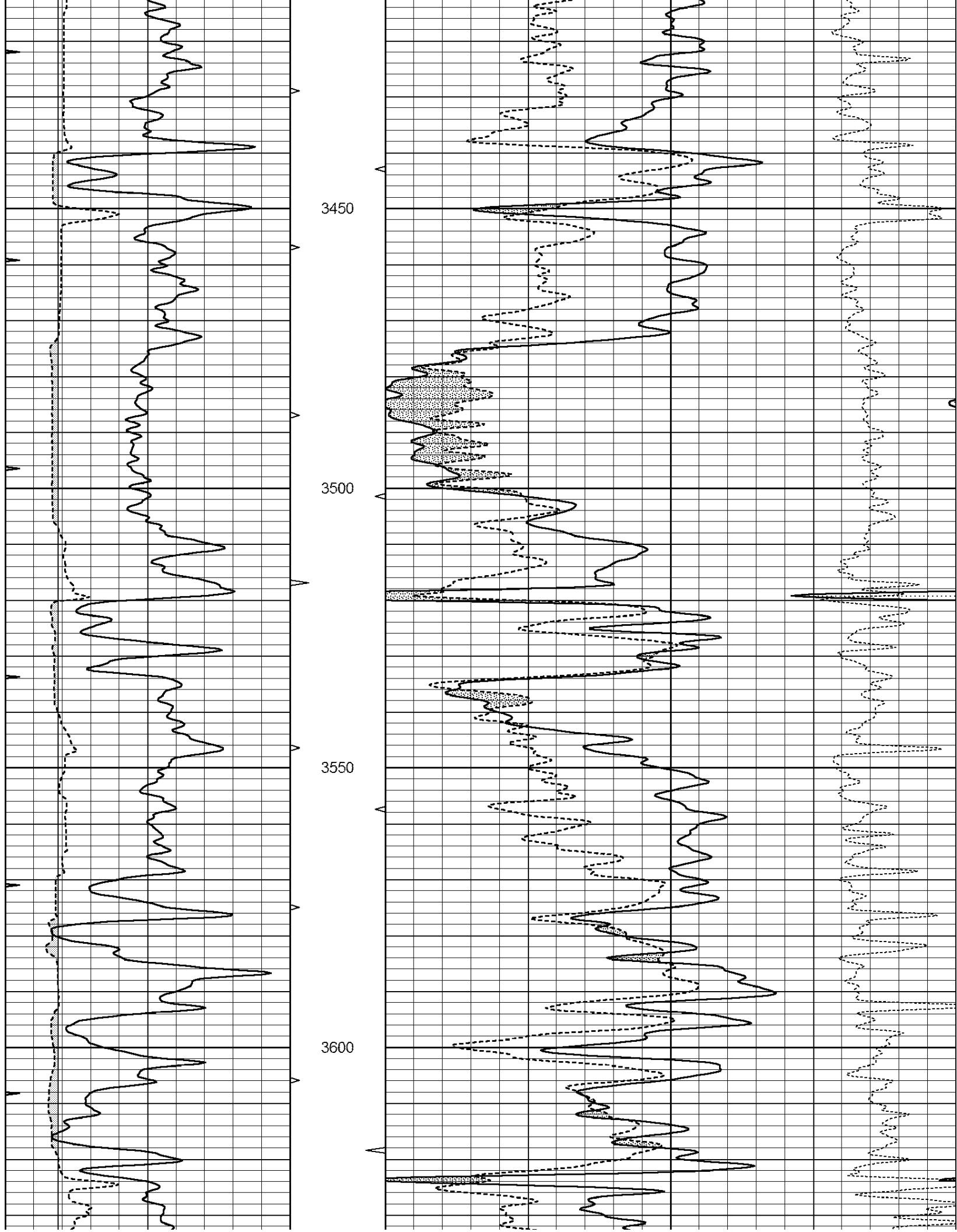
Comments

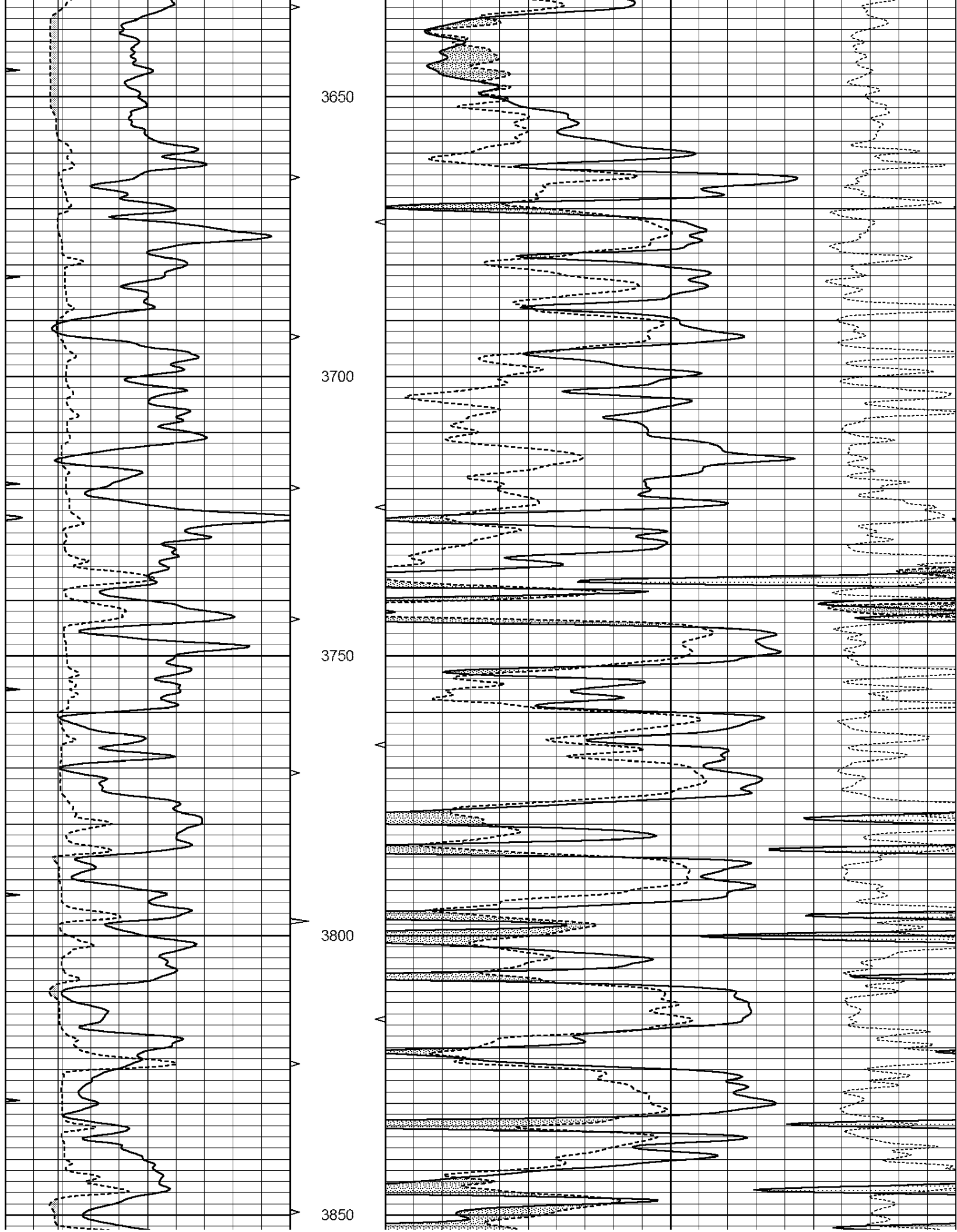
NABORS COMPLETION & PRODUCTION SERVICES CO.
785 (628 - 6395)
THANK YOU FOR YOUR BUSINESS
DIRECTIONS : ATWOOD, KS. - EAST TO LUDELL RD. - TO THE STOP SIGN - JOG WEST THEN BACK
NORTH 5 MILES - WEST INTO

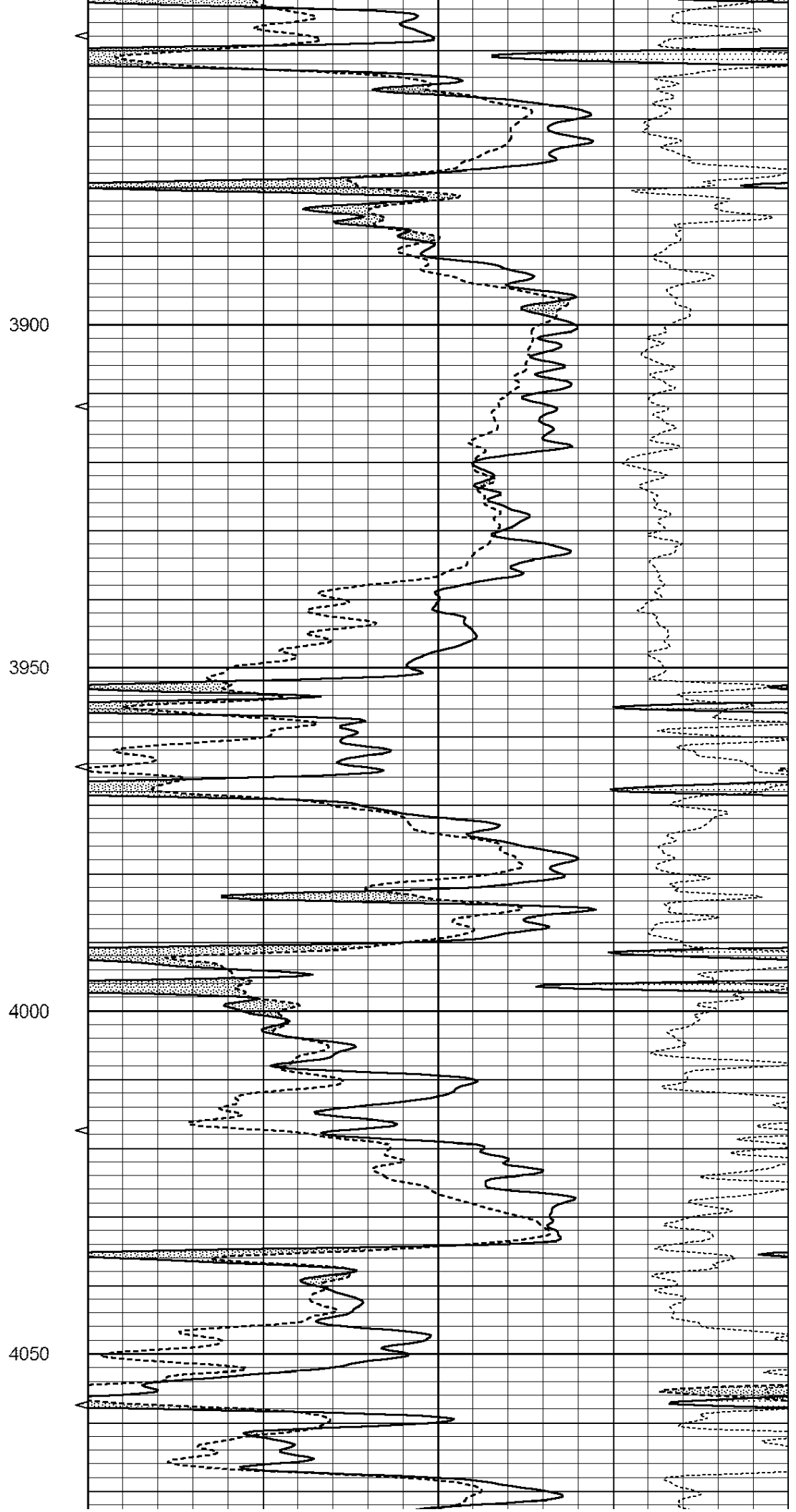
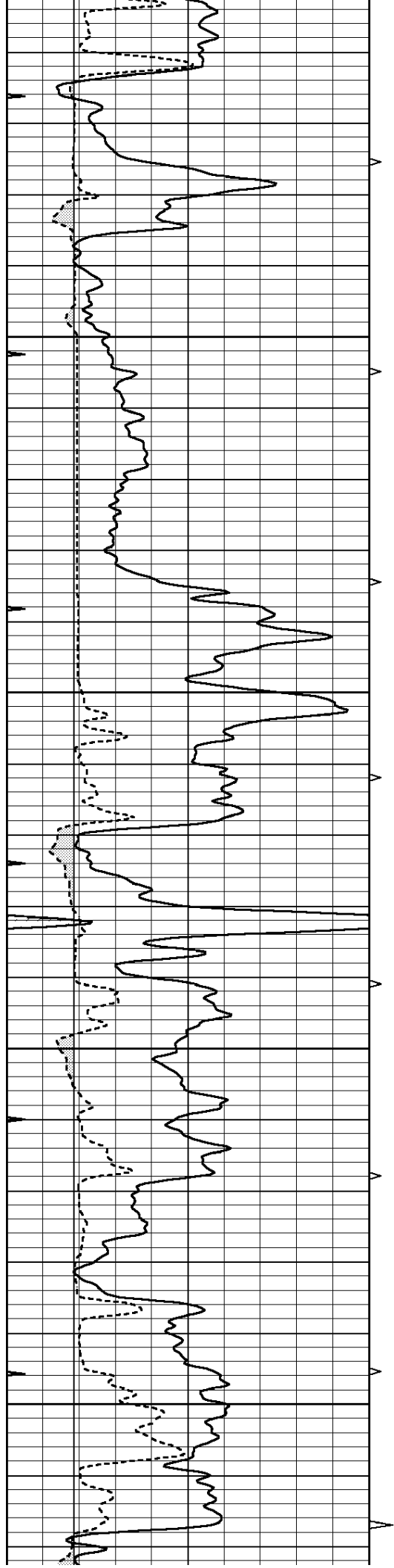
0	GAMMA RAY (GAPI)	150	AVTX	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	BVTX		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		

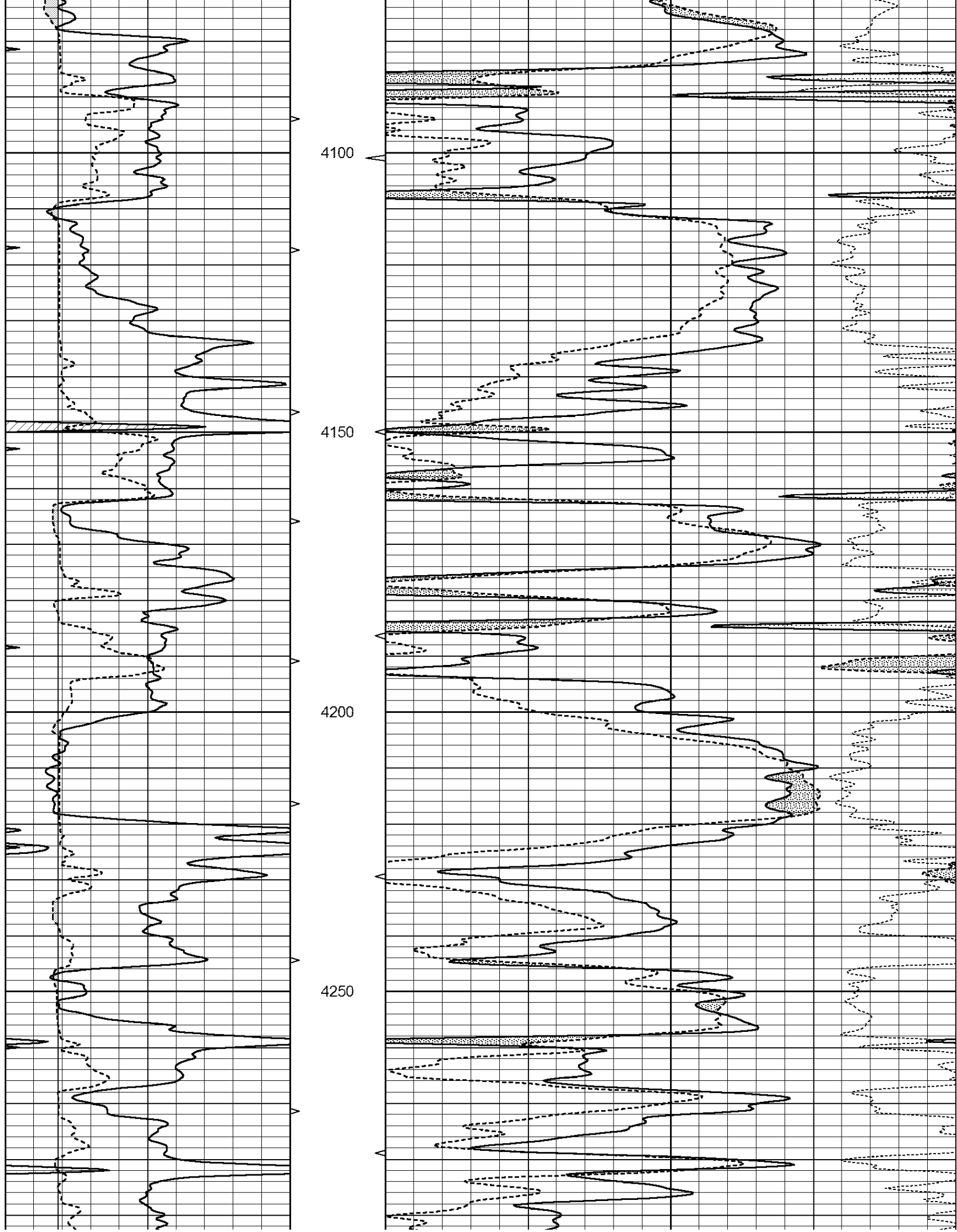


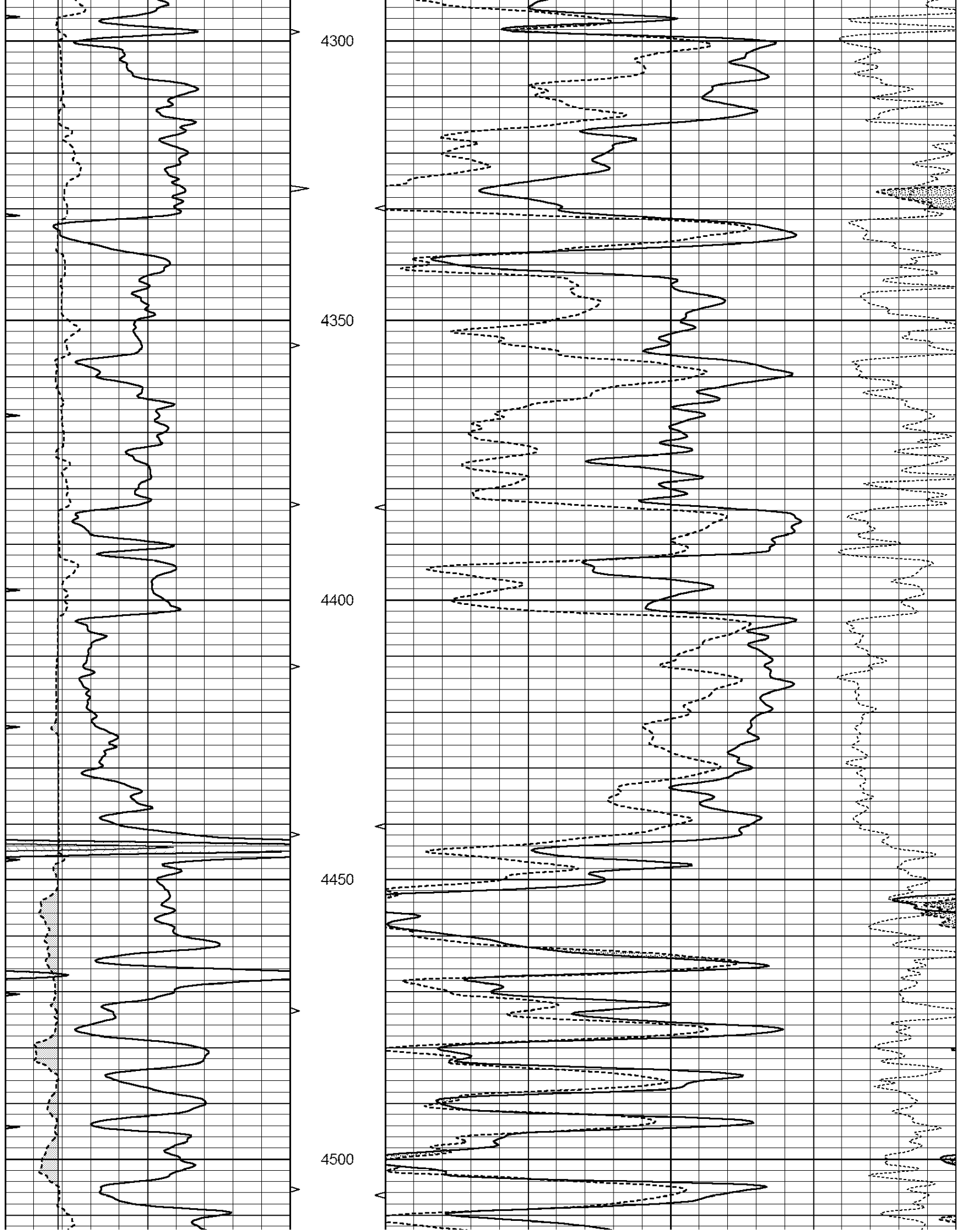


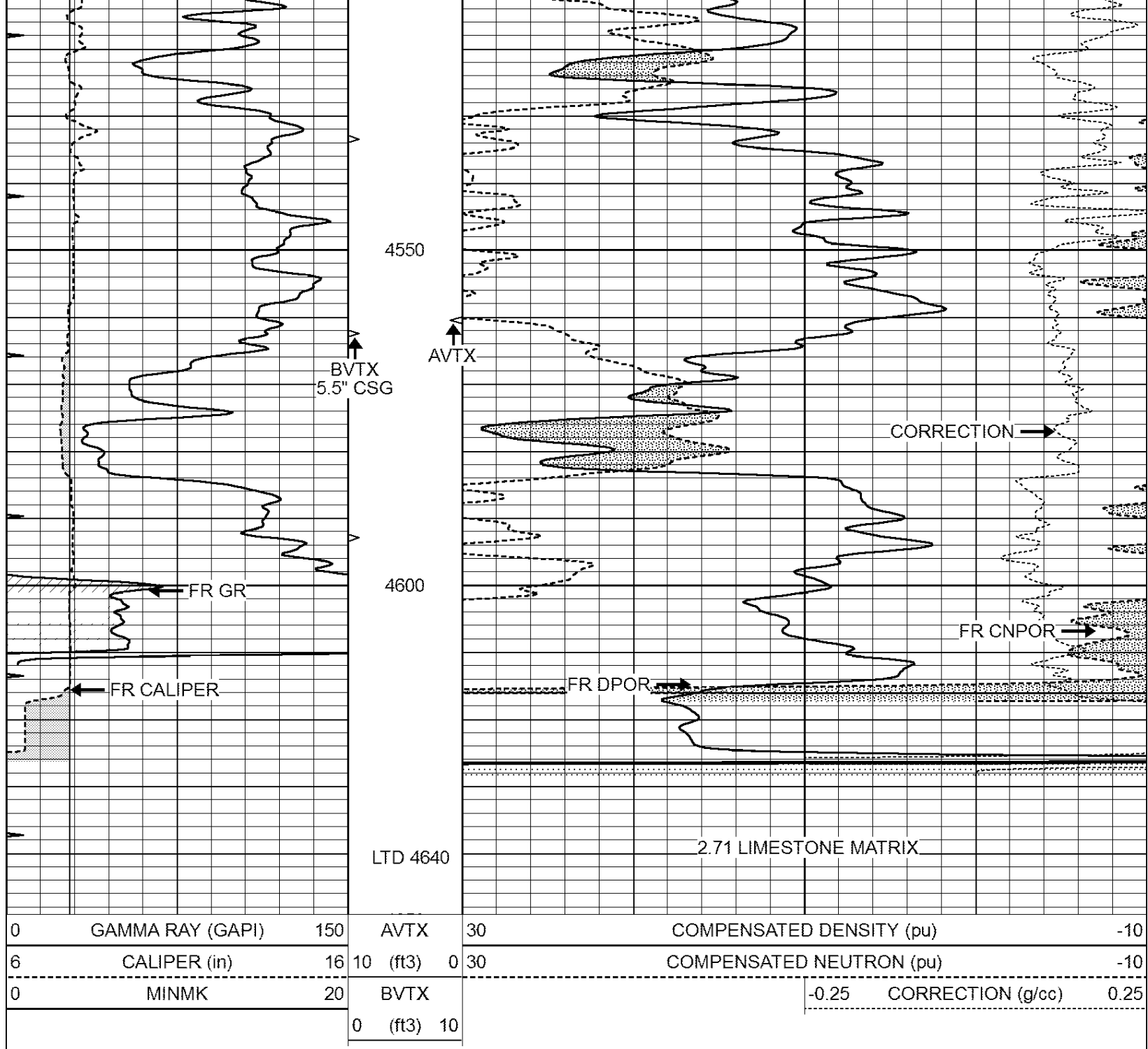












0	GAMMA RAY (GAPI)	150	AVTX	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	BVTX		-0.25	CORRECTION (g/cc) 0.25
			0 (ft3)	10		



REPEAT SECTION

Database File: 26431ddn.db
 Dataset Pathname: pass3.2
 Presentation Format: _den_neu
 Dataset Creation: Thu Jan 15 06:54:21 2015 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

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

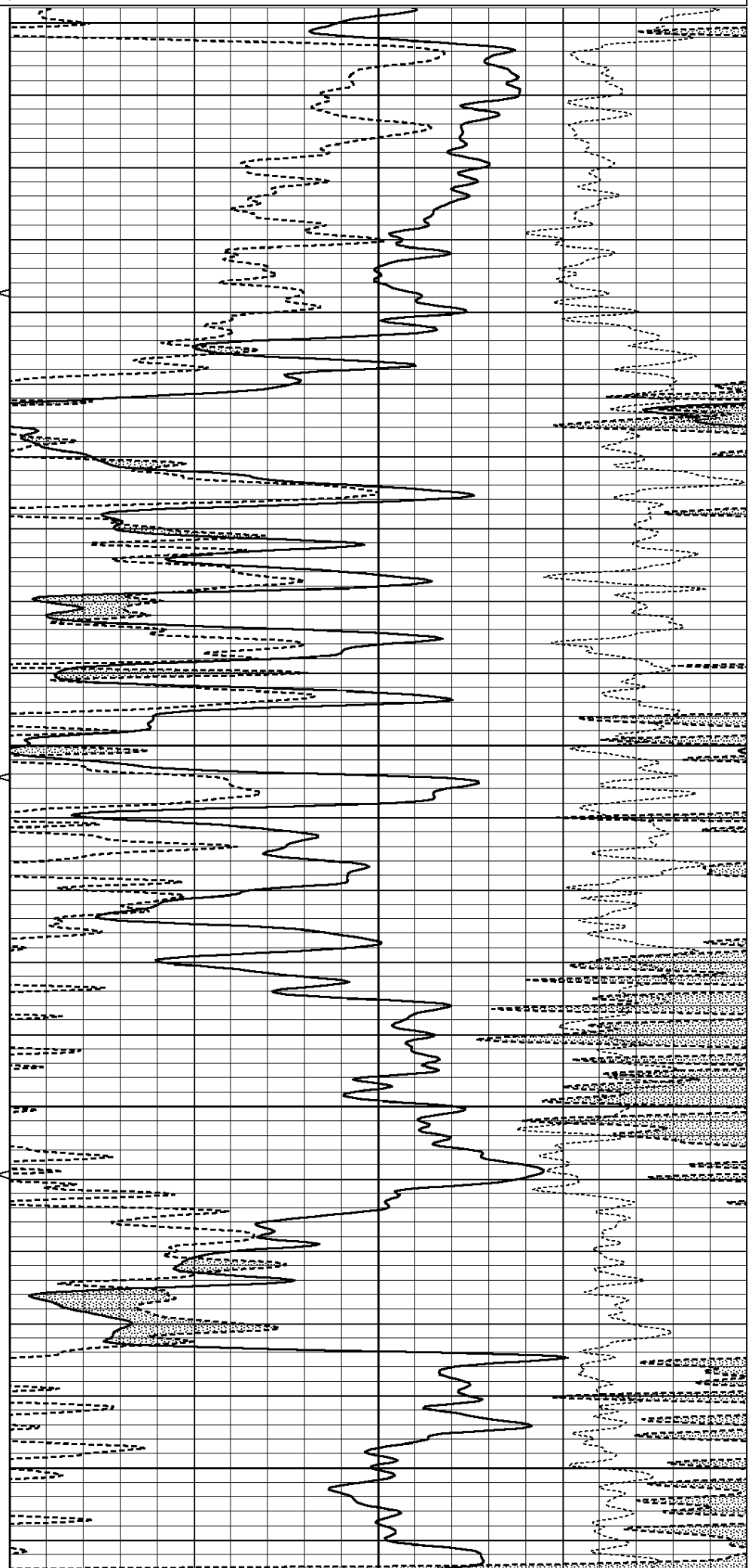
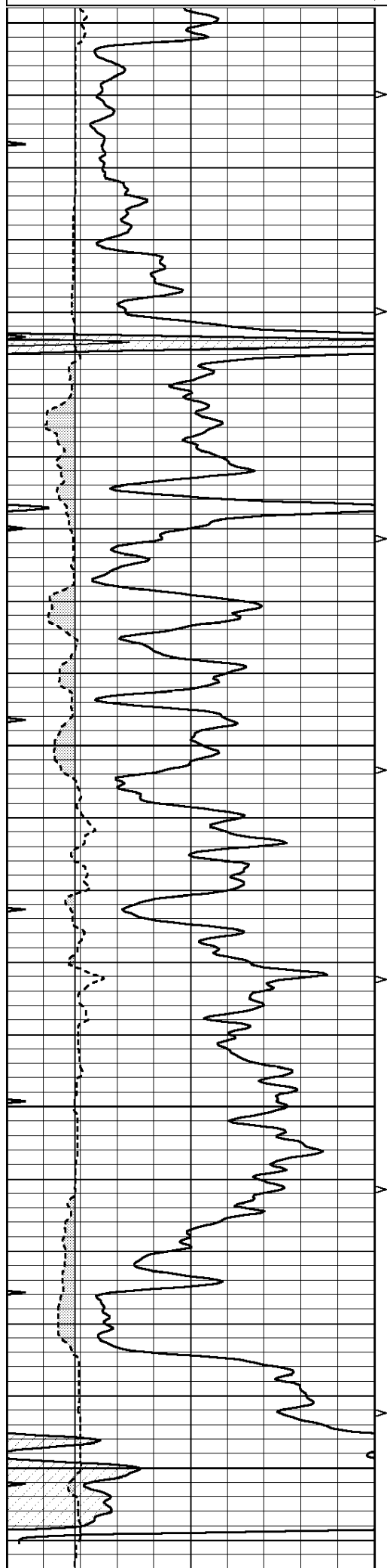
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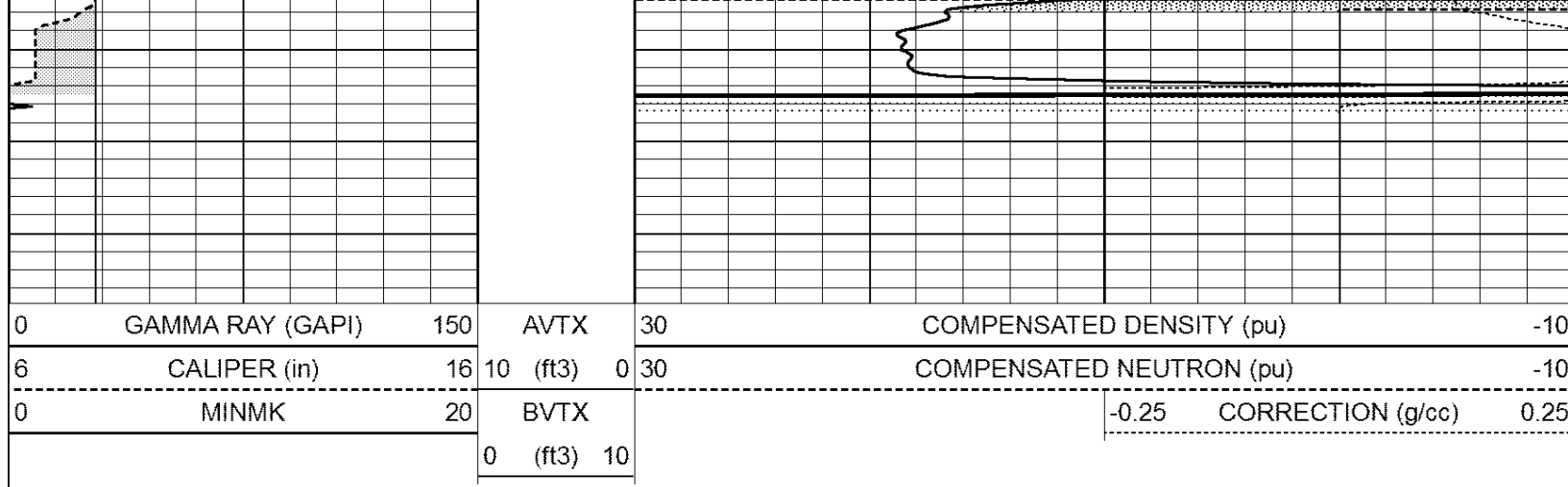
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4550

4600





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

Calibration Report

Database File: 26431ddn.db
 Dataset Pathname: pass4.2
 Dataset Creation: Thu Jan 15 08:22:11 2015 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: PROBE7-DILG
 Surface Cal Performed: Fri Dec 05 11:16:41 2014
 Downhole Cal Performed: Sat Jan 19 19:51:38 2013
 After Survey Verification Performed: Sat Jan 19 19:51:38 2013

Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop	V	Air	Loop	mmho/m	m	b
Deep	0.793	0.790	V	0.000	400.000	mmho/m	520.000	12.000
Medium	0.992	1.002	V	0.000	464.000	mmho/m	570.000	-32.000
Internal:	Zero	Cal	V	Zero	Cal	mmho/m	m	b
Deep	0.041	0.642	V	0.000	400.000	mmho/m	664.874	-27.011
Medium	0.035	0.802	V	0.000	464.000	mmho/m	604.936	-21.367

Downhole Calibration

	Readings			References			Results	
	Zero	Cal	V	Zero	Cal	mmho/m	m'	b'
Deep	135384.000	27094.500	V	135400.000	27082.400	mmho/m	1.000	-19.259
Medium	-47330.100	-9381.740	V	-47327.100	-9389.280	mmho/m	1.000	-10.154
LL3		7.322	V		1400.000	Ohm-m		
		0.038	V		20.000	Ohm-m		
		-7.273	V		4000.000	mmho-m		

After Survey Verification

	Readings			Targets			Results	
	Zero	Cal	V	Zero	Cal	mmho/m	m'	b'
Deep	0.000	0.000	V	135384.000	27094.500	mmho/m	1.000	0.000
Medium	0.000	0.000	V	-47330.100	-9381.740	mmho/m	1.000	0.000
LL3		0.000	V		1400.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		0.000	V		4000.000	mmho-m		

Compensated Density Calibration Report

Serial-Model: GEAR5-GEARHART
 Source / Verifier: 117 / 117

Source / vendor:
 Master Calibration Performed:
 Before Survey Verification Performed:
 After Survey Verification Performed:

147 / 147
 Wed Dec 17 11:46:19 2014

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	894.82	531.60	cps
Aluminum	2.600	g/cc	199.46	368.39	cps
Spine Angle = 76.27			Density/Spine Ratio = 0.576		
	Size		Reading		
Small Ring	8.20	in	1.64	V	
Large Ring	14.00	in	2.93	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: 080620
 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: 46001
 Tool Model: Probe1
 Performed: Mon Nov 24 09:45:18 2014

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 0.2600 GAPI/cps