COMPENSATED DENSITY/NEUTRON LOG

Company GRUNDER OIL, LLC.
Well GRUNDER #3
Field LEESBURG
County STAFFORD
State KANSAS

Company GRUNDER OIL, LLC.
Well GRUNDER #3
Field LEESBURG
County STAFFORD State KANSAS
Location: API # : 15-185-24050-0000
480' FNL & 1670' FWL
SEC 14 TWP 25S RGE 13W

Other Services
DIL/MEL

Permanent Datum GROUND LEVEL Elevation 1921
Log Measured From KELLY BUSHING 6' A.G.L.
Drilling Measured From KELLY BUSHING

Elevation
K.B. 1927
D.F. 1925
G.L. 1921

Date	12/01/19		
Run Number	ONE		
Depth Driller	4335		
Depth Logger	4334		
Bottom Logged Interval	4314		
Top Log Interval	3000		
Casing Driller	8 5/8" @ 645		
Casing Logger	645		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.4/54		
pH / Fluid Loss	10.0/12.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.56 @ 55F		
Rmf @ Meas. Temp	.42 @ 55F		
Rmc @ Meas. Temp	.68 @ 55F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	.25@ 119F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	////		
Maximum Recorded Temperature	119F		
Equipment Number	1523		
Location	HAYS, KANSAS		
Recorded By	GUS PFANENSTIEL		
Witnessed By	KEATON JONES		

<<< Fold Here >>>

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

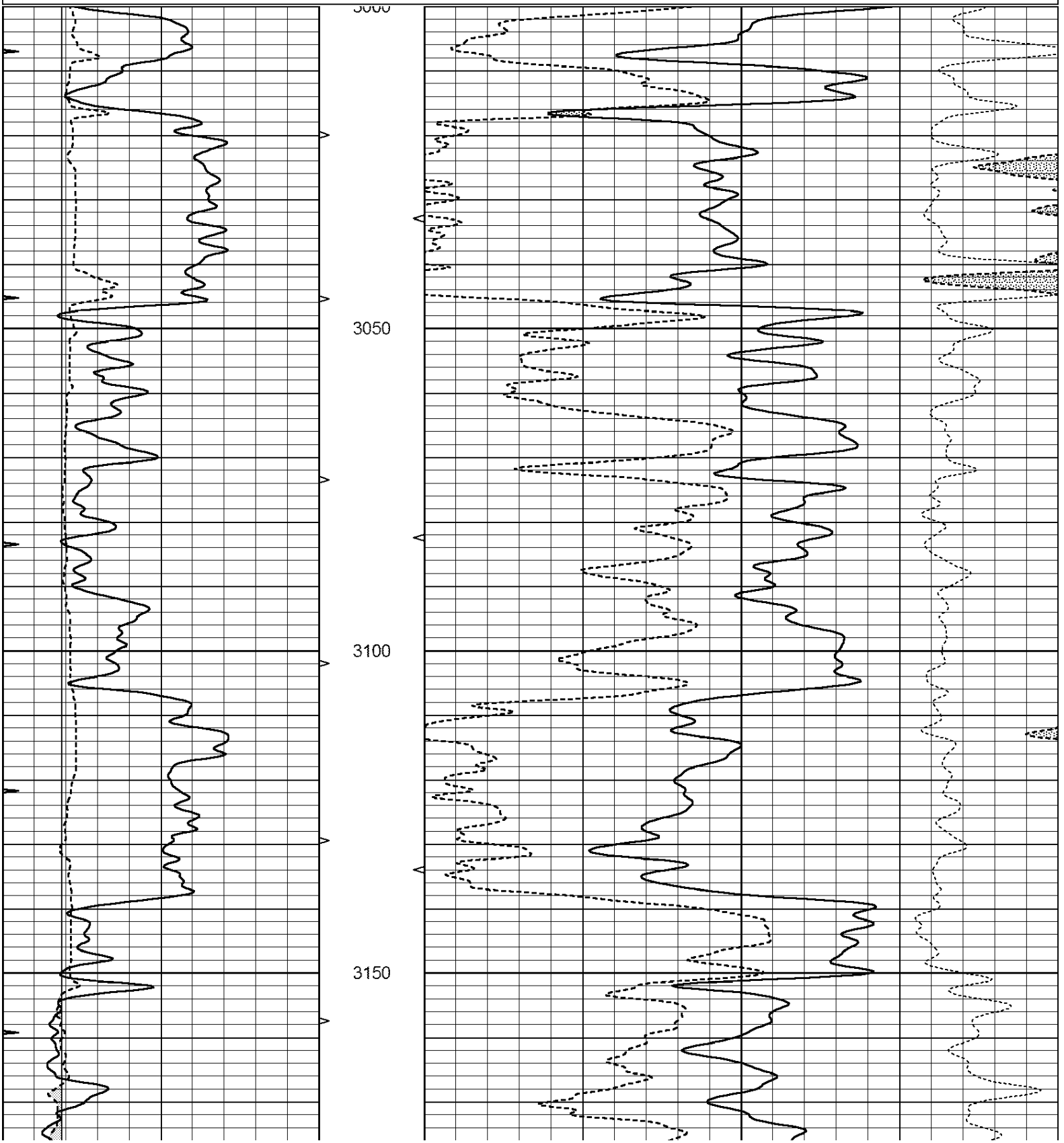
THANK YOU FOR USING ELI WIRELINE, HAYS, KS. (785) 628-6395

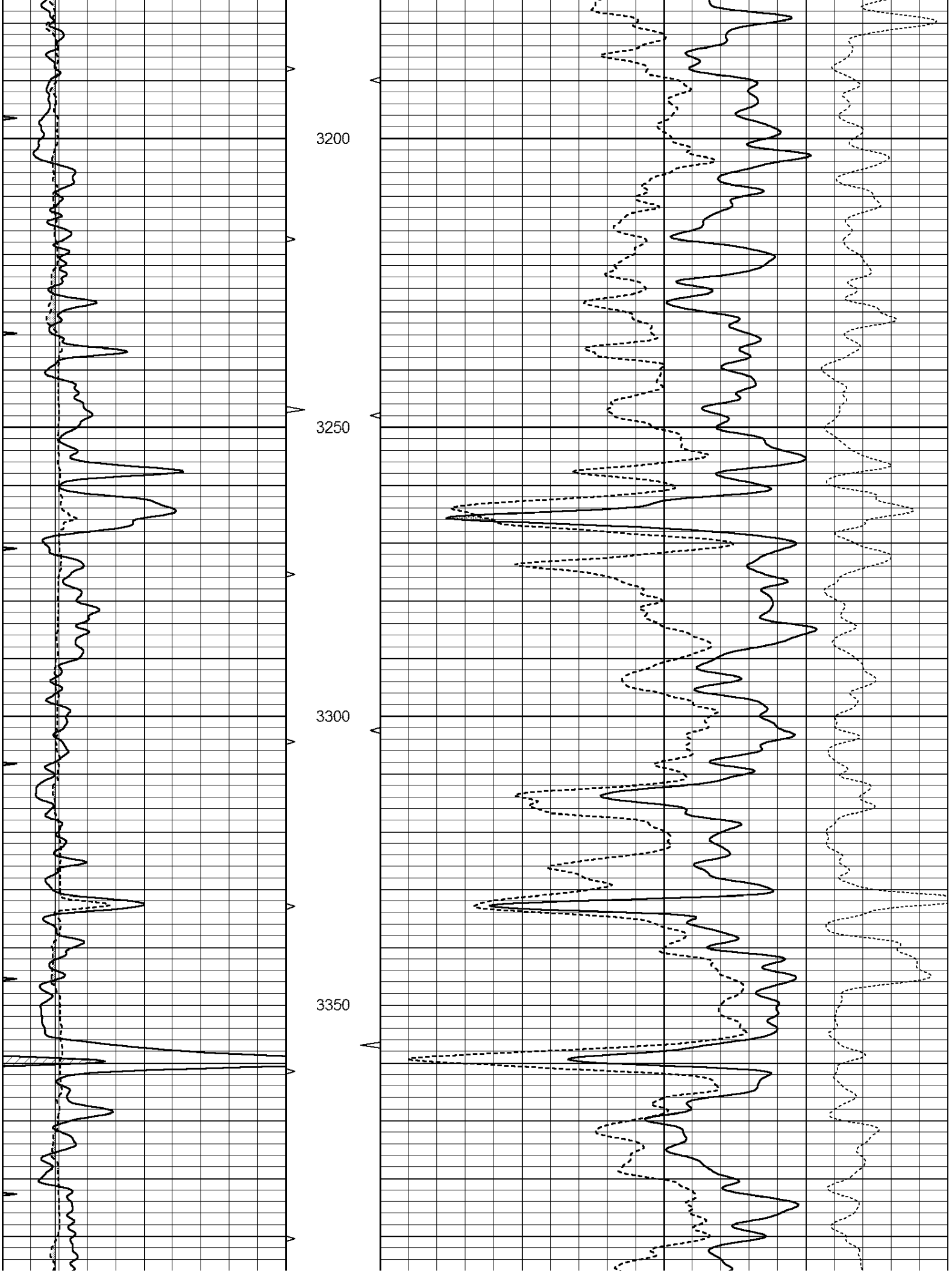
DIRECTIONS
ST. JOHN SOUTH TO 50 TH RD.
EAST 1.5 MILES, SOUTH INTO.

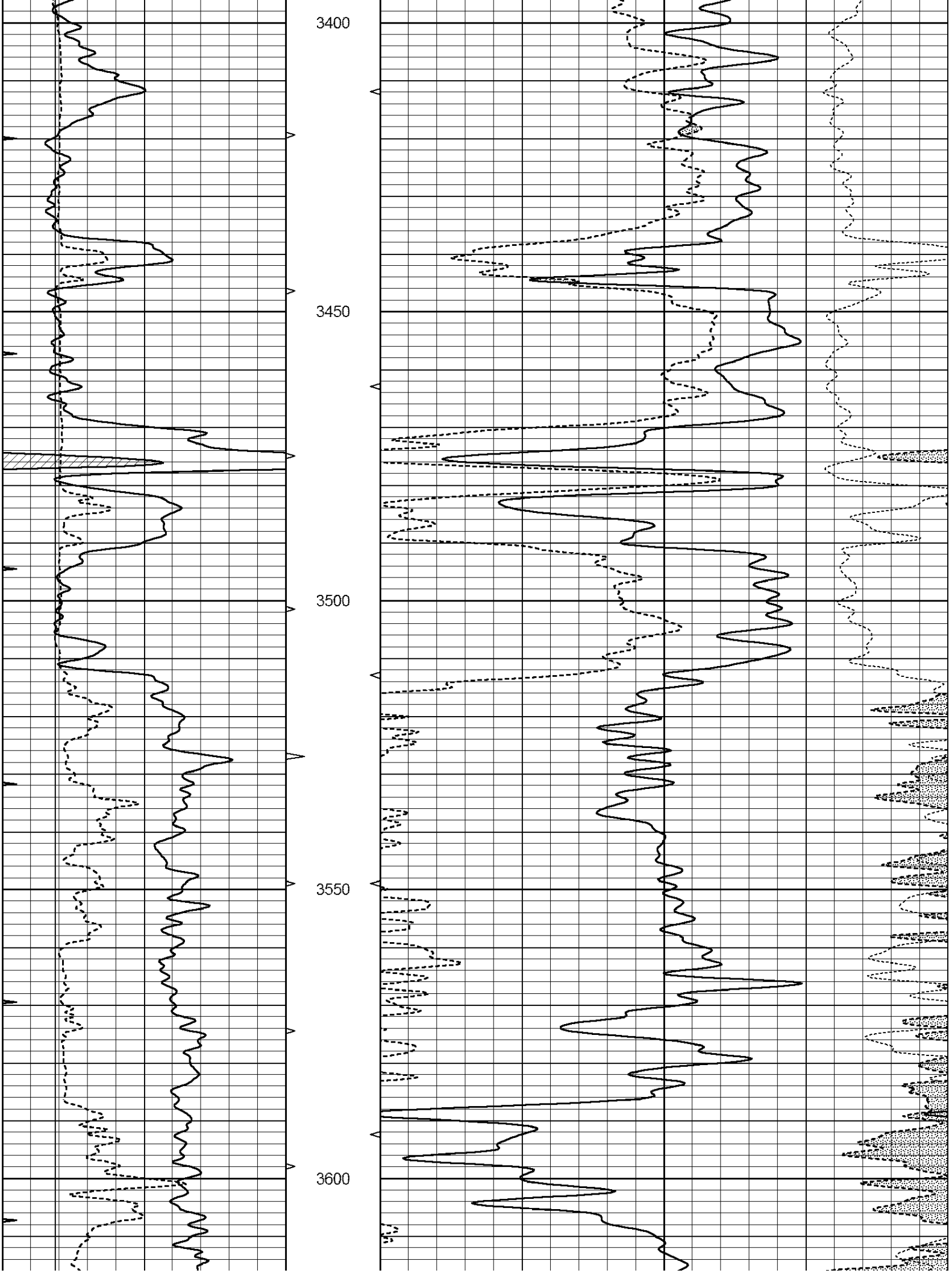
MAIN PASS

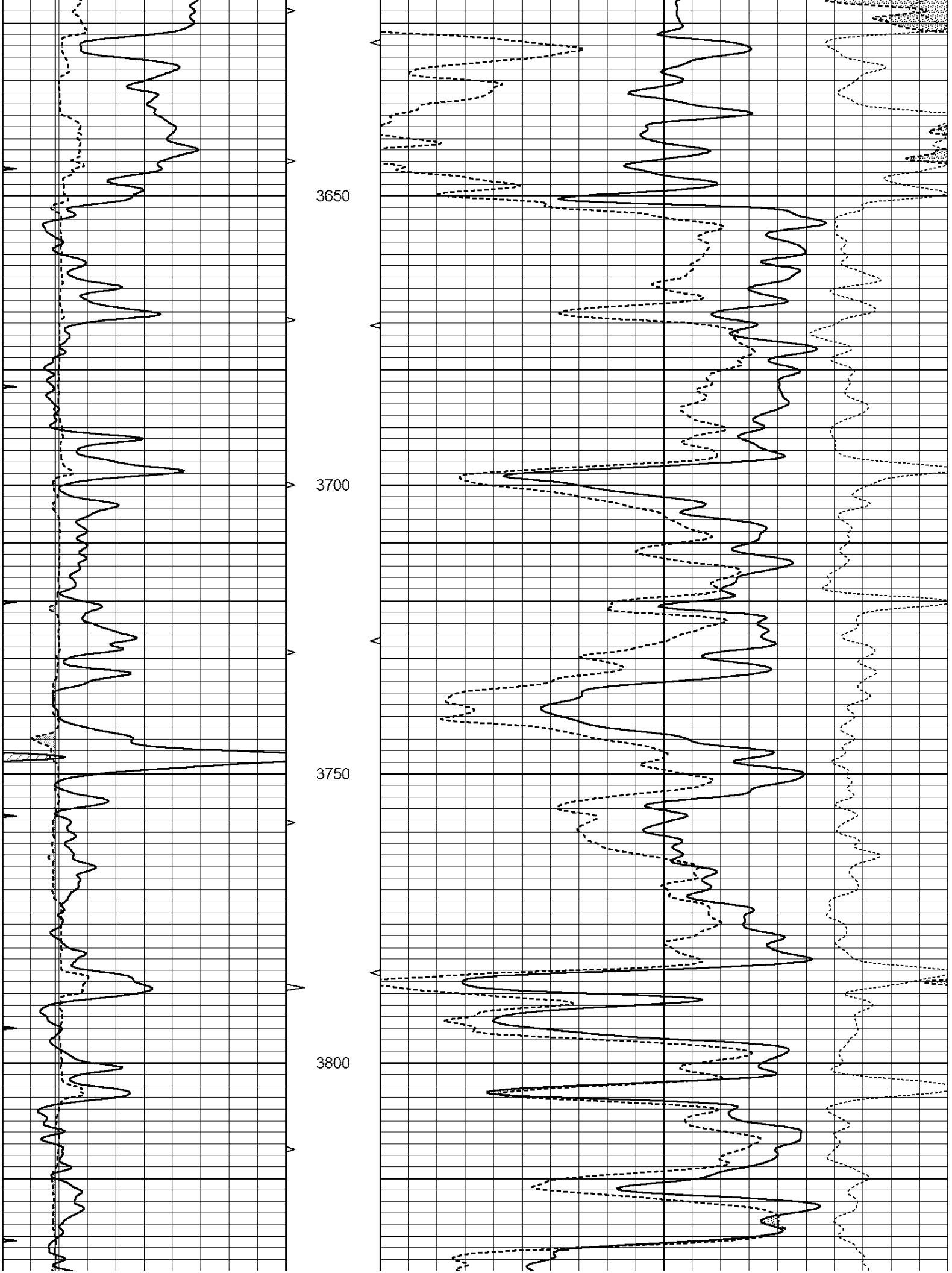
Database File: 4464ddn.db
Dataset Pathname: pass3
Presentation Format: den_neu
Dataset Creation: Sun Dec 01 02:55:16 2019 by Log Open-Cased 090629
Charted by: Depth in Feet scaled 1:240

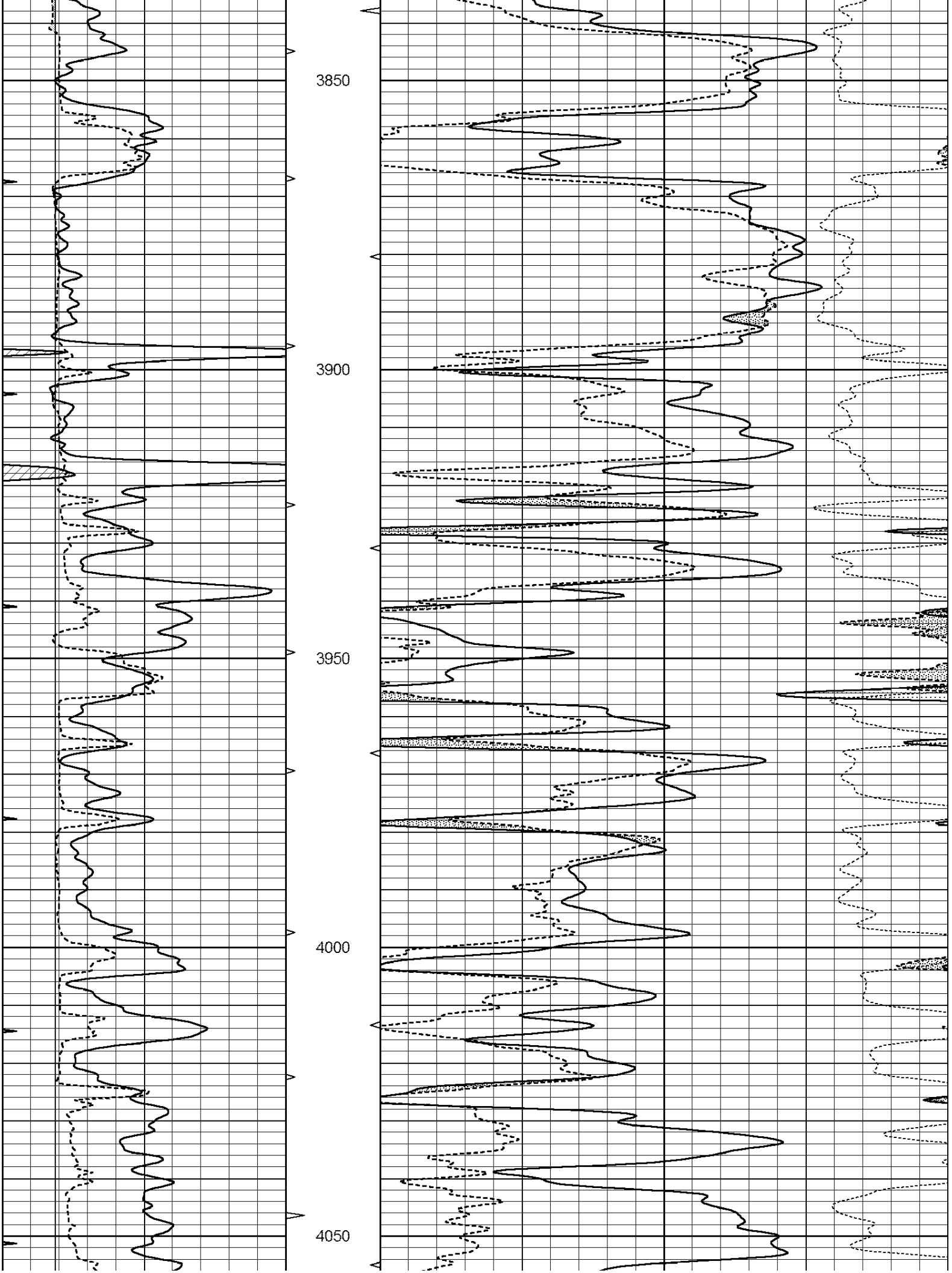
0	GAMMA RAY (GAPI) 150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in) 16	10 (ft3) 0	30	COMPENSATED NEUTRON (pu)	-10
0	MINMK 20	TBHV		-0.25 CORRECTION (g/cc)	0.25
		0 (ft3) 10			

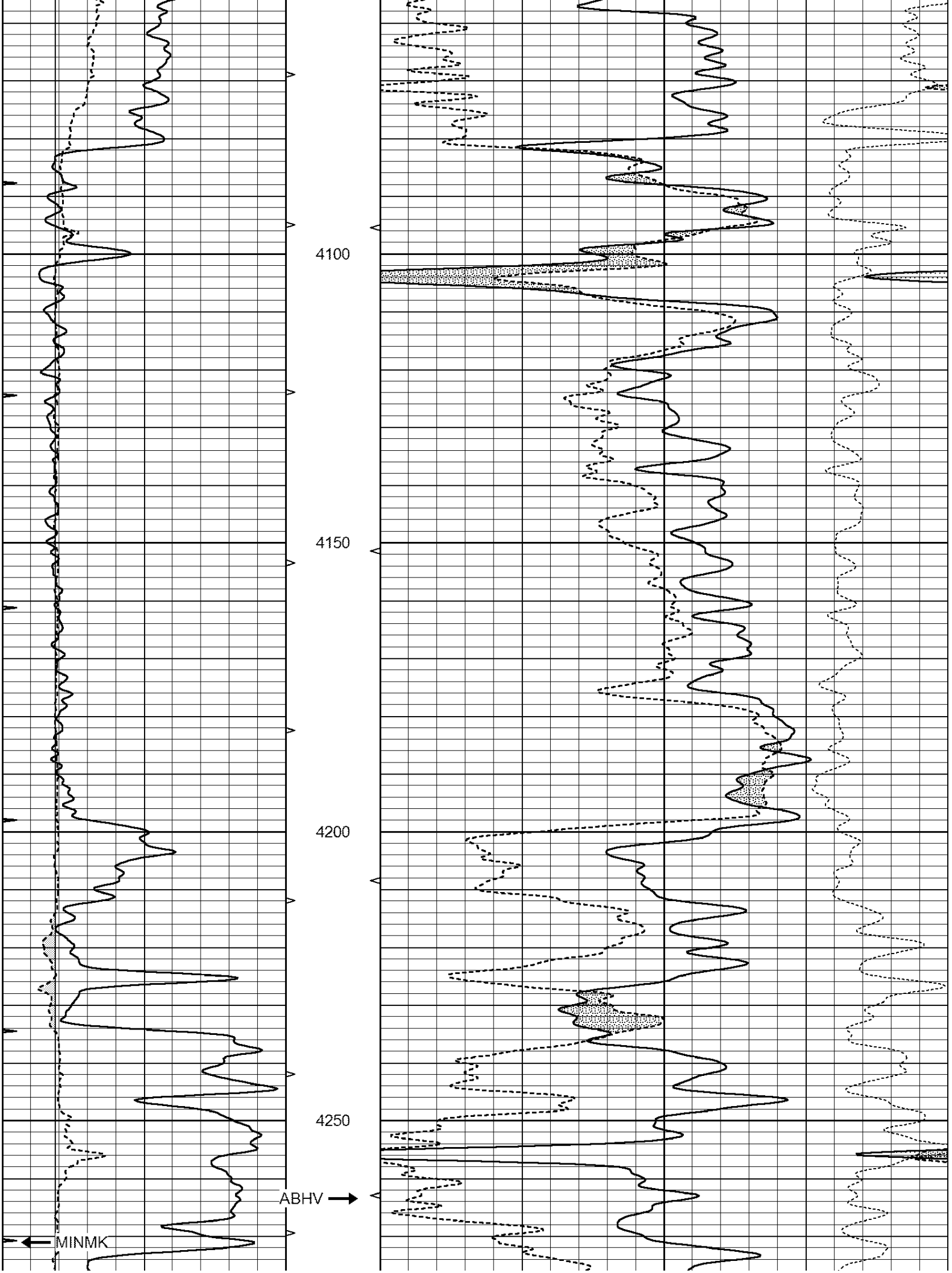


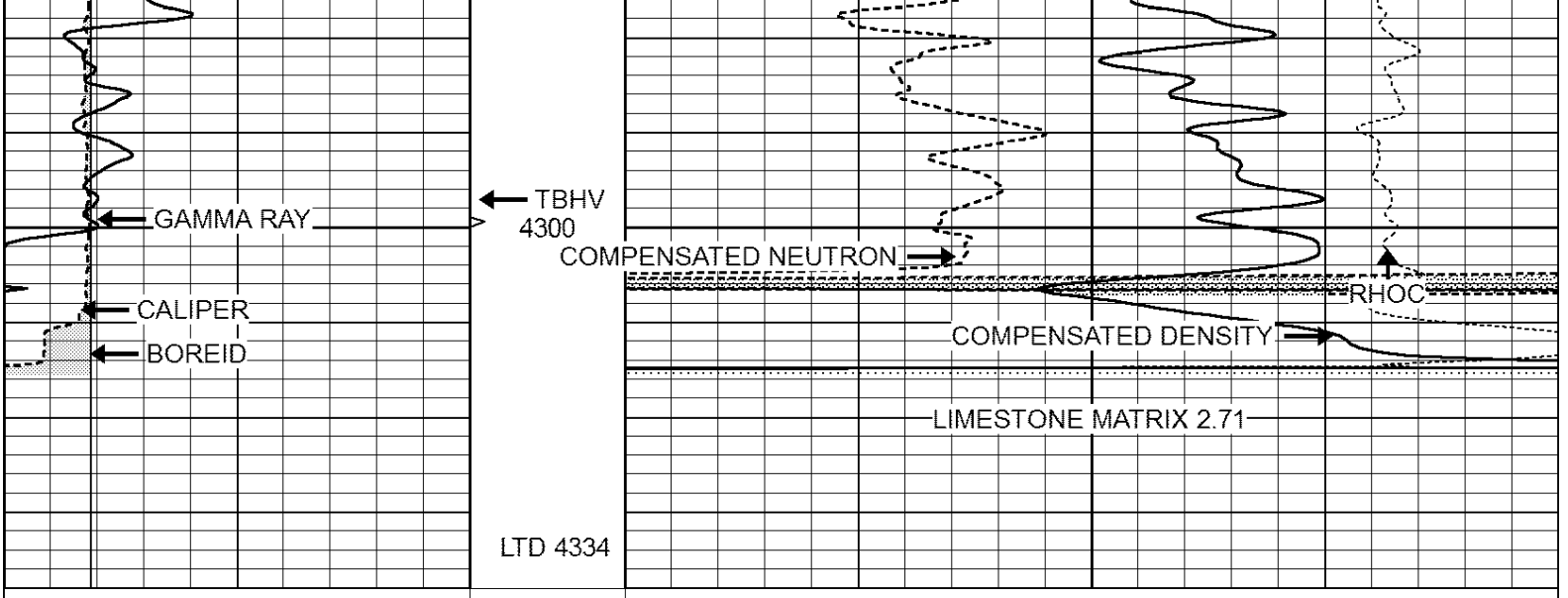

3200
3250
3300
3350


3400
3450
3500
3550
3600


3650
3700
3750
3800


3850
3900
3950
4000
4050


4100
4150
4200
4250
ABHV
MINMK

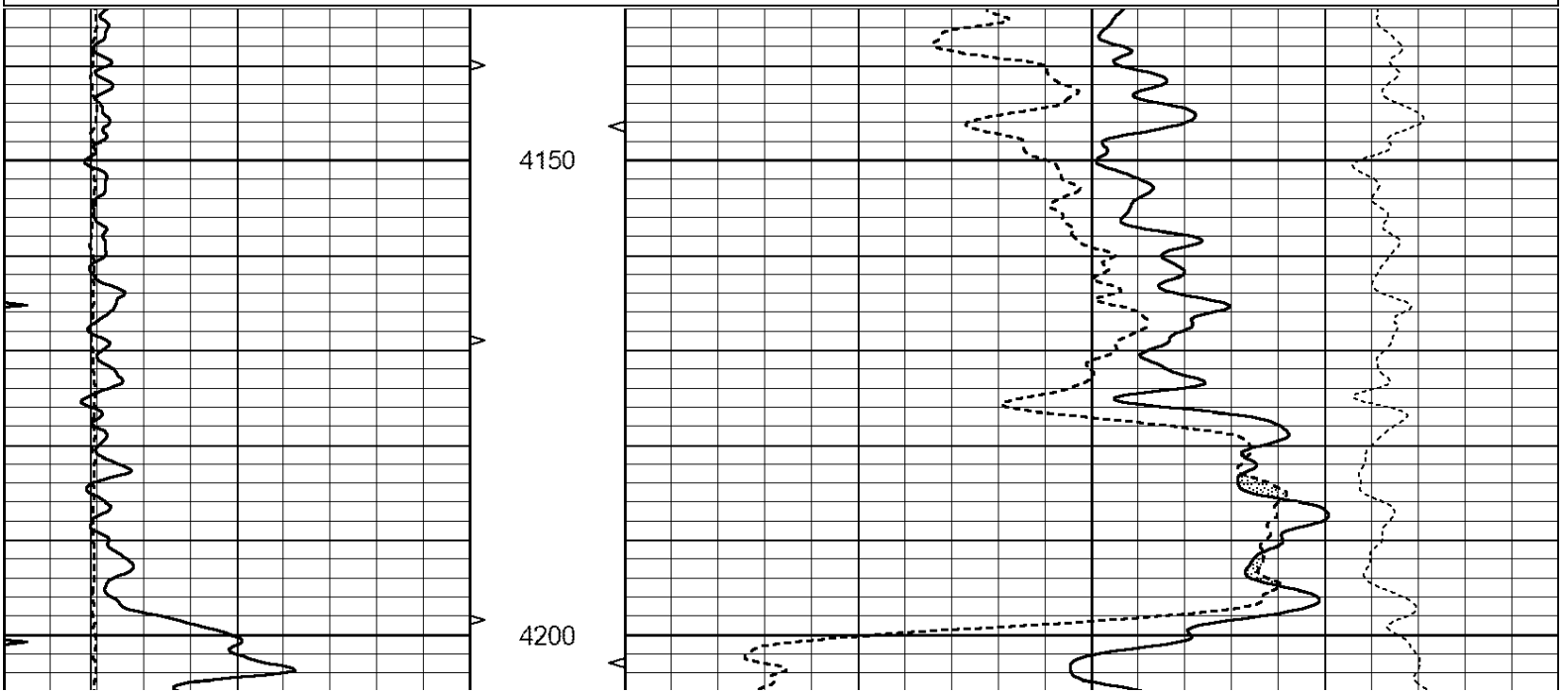


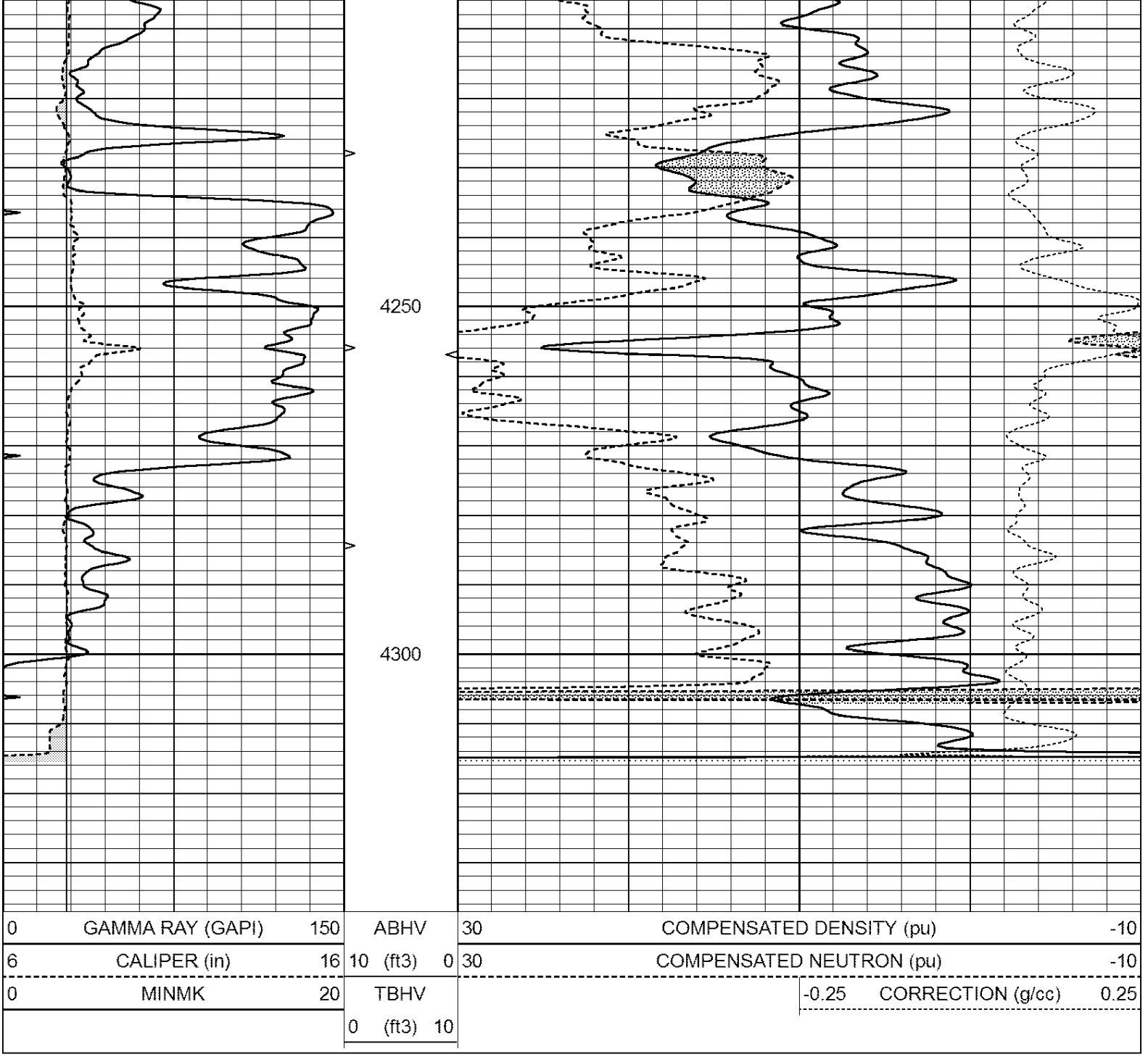
0	GAMMA RAY (GAPI)	150	ABHV		30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0	30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV			-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10			

REPEAT SECTION

Database File: 4464ddn.db
Dataset Pathname: pass2.1
Presentation Format: den_neu
Dataset Creation: Sun Dec 01 02:57:26 2019 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: 4464ddn.db
Dataset Pathname: pass2.1
Dataset Creation: Sun Dec 01 02:57:26 2019 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model:	PROBE8-DILG
Surface Cal Performed:	Mon Sep 10 14:28:35 2018
Downhole Cal Performed:	Mon Sep 10 14:28:38 2018
After Survey Verification Performed:	Mon Sep 10 14:28:40 2018

Surface Calibration

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	620.000	0.000
Medium	0.029	0.796	V	0.000	464.000	mmho/m	590.000	-12.000

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		

Litho Density Calibration Report
Serial: 002N Model: PRB

Master Calibration — Performed Fri Nov 15 10:35:24 2019

	Background	Magnesium	Aluminum	Sandstone	
Window 1	787.1	6921.0	2135.1	8114.7	cps
Window 2	727.1	5838.4	1850.2	6732.1	cps
Window 3	582.0	2903.9	1086.1	3274.7	cps
Window 4	176.1	176.4	176.3	175.0	cps
Long Space	0.0	5111.3	1123.1	6005.0	cps
Short Space	1.4	1217.9	831.6	1310.0	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	

Rib Angle	: 45.9	Rib Slope	: 1.031	Density/Spine Ratio	: 0.563
Spine Angle	: 75.9	Spine Slope	: 3.971	Spine Intercept	: -19.7

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	

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: Wed Jul 03 12:57:34 2019

Calibrator Value: 150.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 276.0 cps

Sensitivity: 0.5700 GAPI/cps