

COMPENSATED DENSITY/NEUTRON PE/LOG

Company	HARTMAN OIL CO., INC.	Company	HARTMAN OIL CO., INC.
Well	WILKONSON #1-32	Well	WILKONSON #1-32
Field	N/A	Field	N/A
County	BUTLER	County	BUTLER
State	KANSAS	State	KANSAS
Location:	API # : 15-015-24121-00-00	Other Services	DIL/MEL
	1966' FNL & 1882' FEL		
Permanent Datum	SEC 32 TWP 24S RGE 3E	Elevation	
Log Measured From	GROUND LEVEL		1351
Drilling Measured From	KELLY BUSHING 5' A.G.L.		
	KELLY BUSHING		
Date	04/10/19		
Run Number	ONE		
Depth Driller	3290		
Depth Logger	3322		
Bottom Logged Interval	3302		
Top Log Interval	1700		
Casing Driller	8 5/8" @ 257		
Casing Logger	257		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.4/49		
pH / Fluid Loss	11.0/8.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.7@72		
Rmt @ Meas. Temp	.53@72		
Rmc @ Meas. Temp	.84@72		
Source of Rmt / Rmc	MEASURED		
Rm @ BHT	.46@110		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	///		
Maximum Recorded Temperature	110F		
Equipment Number	1523		
Location	HAYS, KANSAS		
Recorded By	GUS PFANENSTIEL		
Witnessed By	CHRIS PETERS		

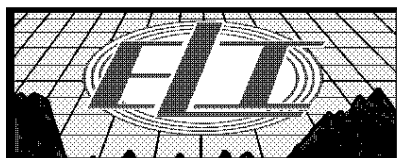
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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on 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 ELI WIRELINE, HAYS, KS. (785) 628-6395

DIRECTIONS
WHITEWATER EAST TO BUTLER RD., SOUTH 2 MILES
1/2 EAST, SOUTH INTO.

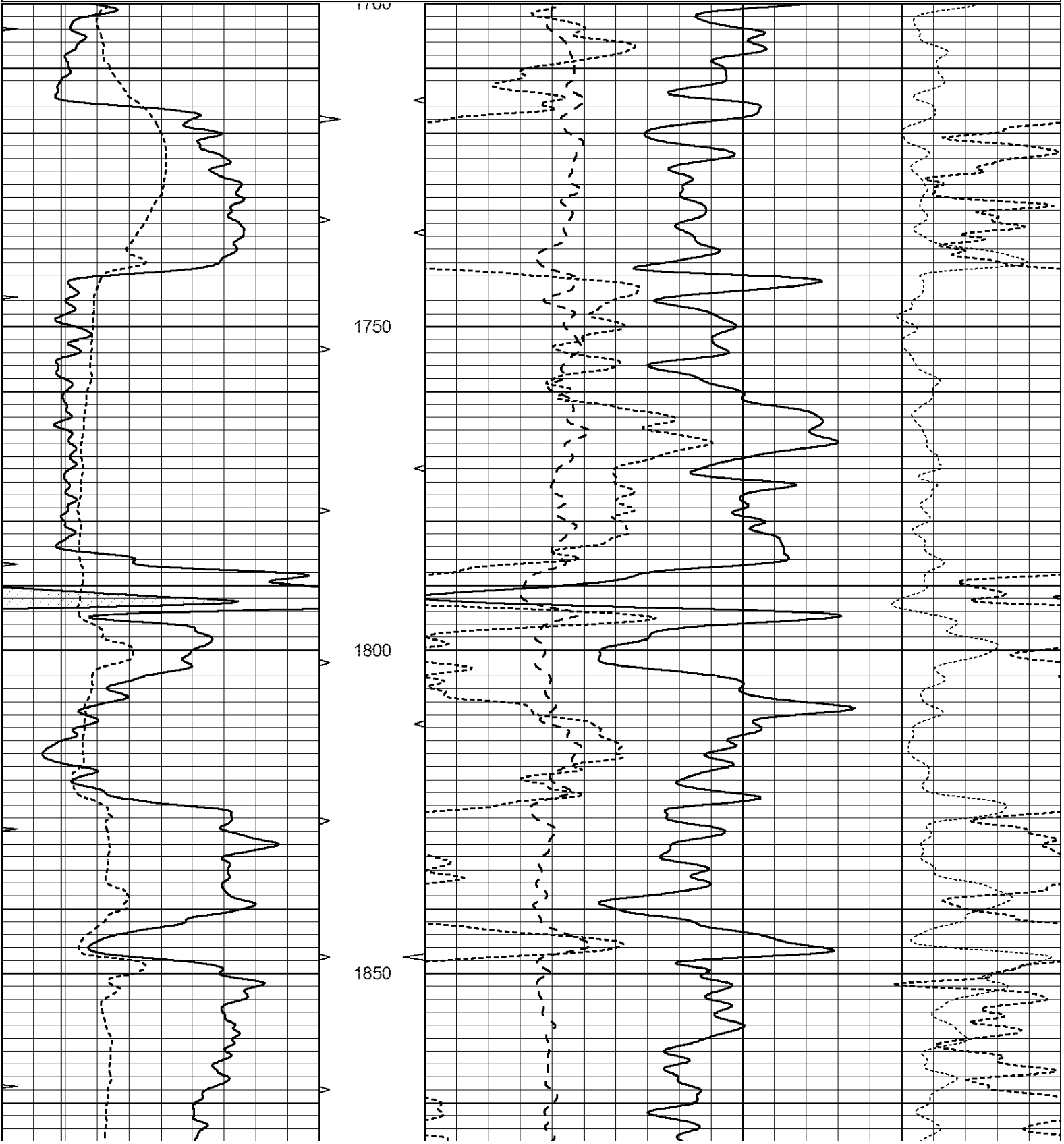


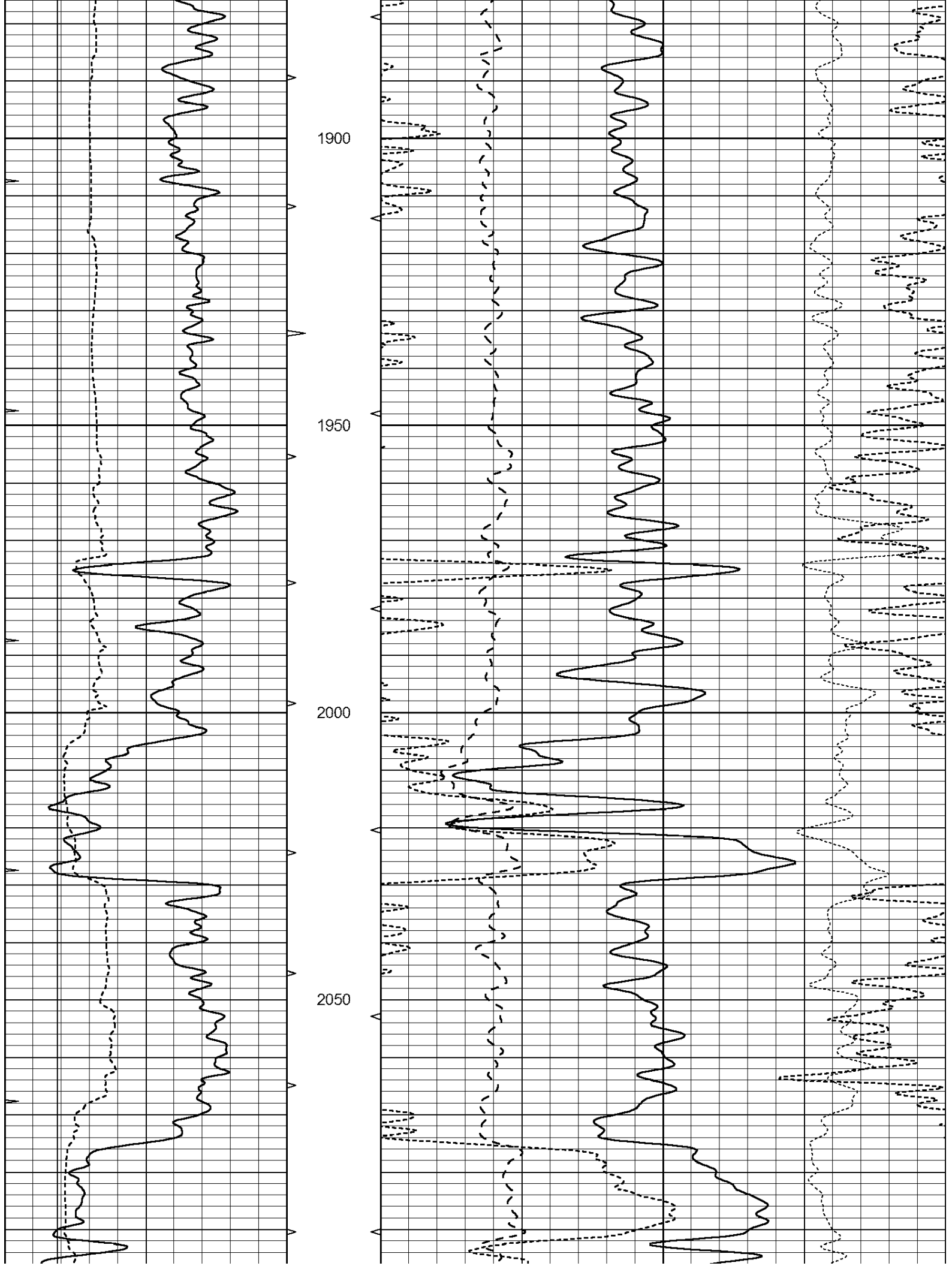
MAIN PASS

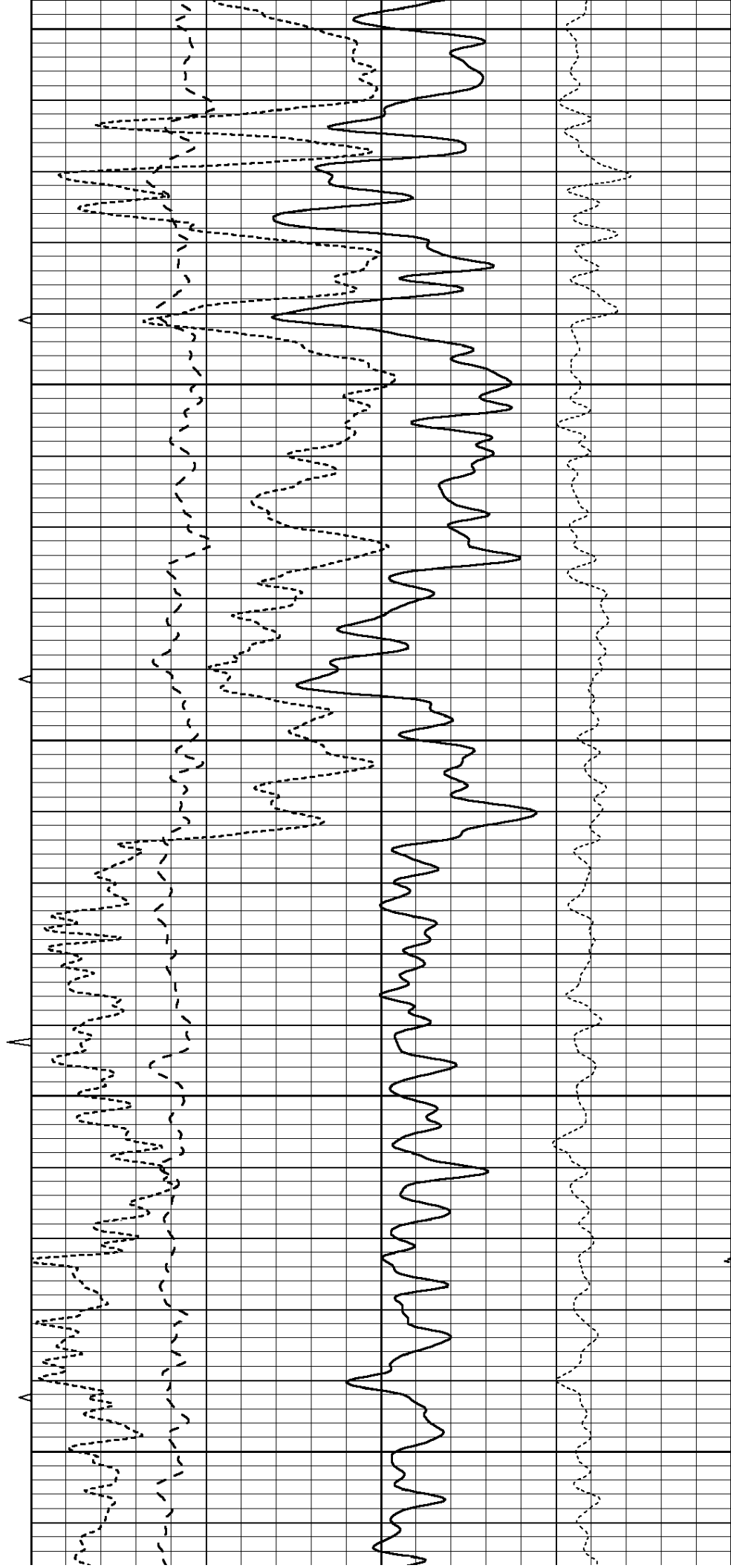
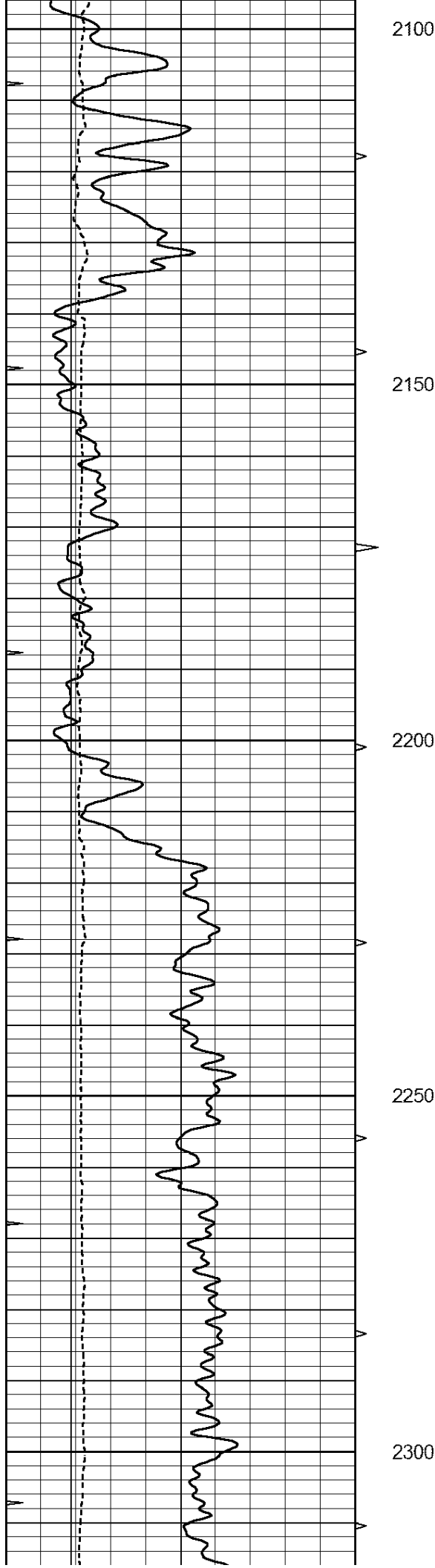
Database File: 3496pe.db
Dataset Pathname: pass3.1
Presentation Format: _ldt_neu
Dataset Creation: Wed Apr 10 06:09:44 2019
Charted by: Depth in Feet scaled 1:240

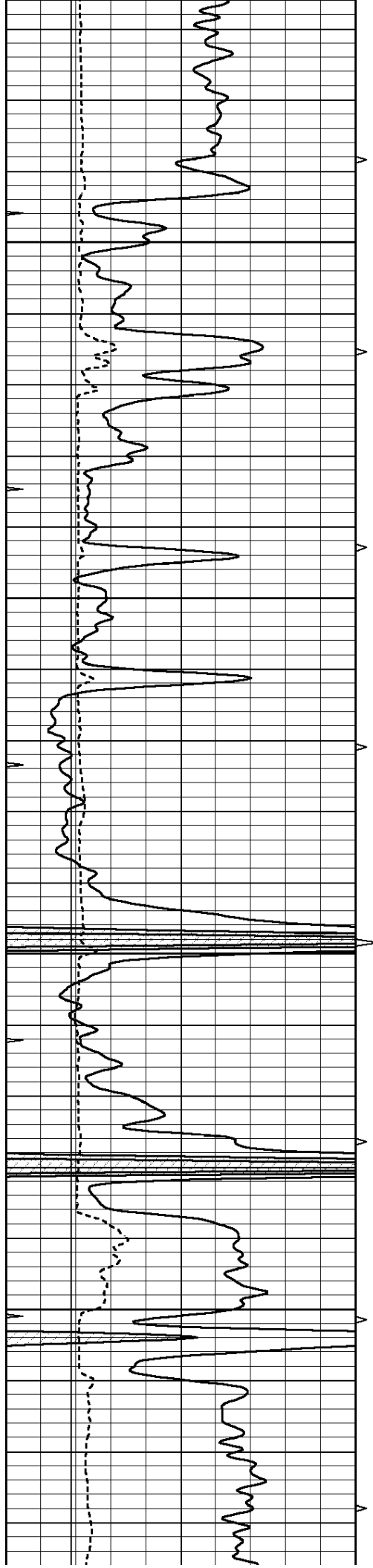
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)			-10	
6	CALIPER (in)	16	10 (ft3)	0	30	COMPENSATED NEUTRON (pu)			-10

0	MINMK	20	TBHV	0	PE	10	-0.25	CORRECTION (g/cc)	0.25
			0 (ft3)	10					







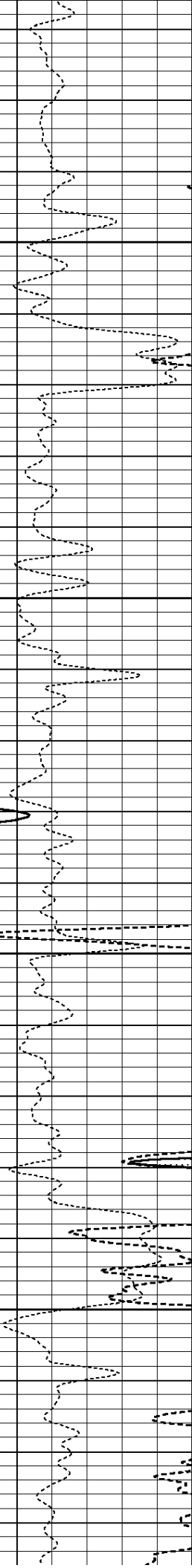
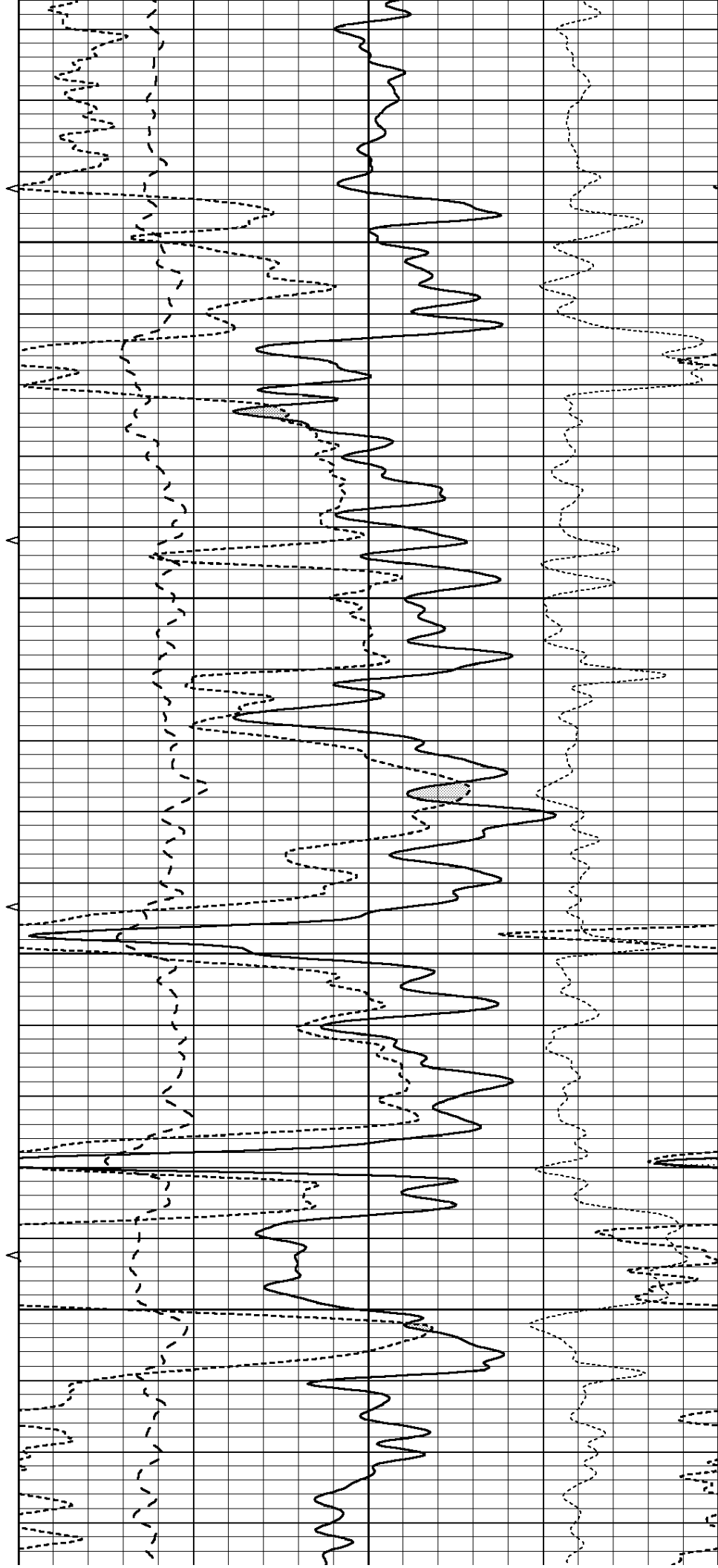


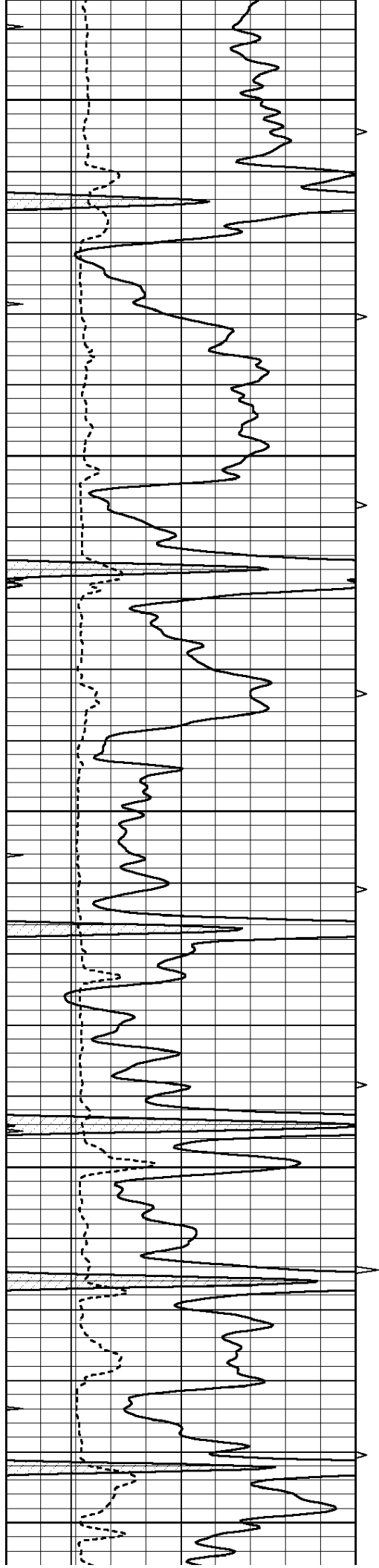
2350

2400

2450

2500





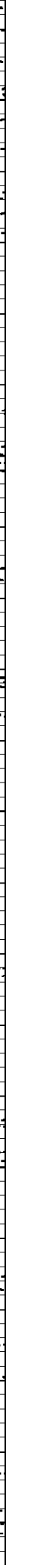
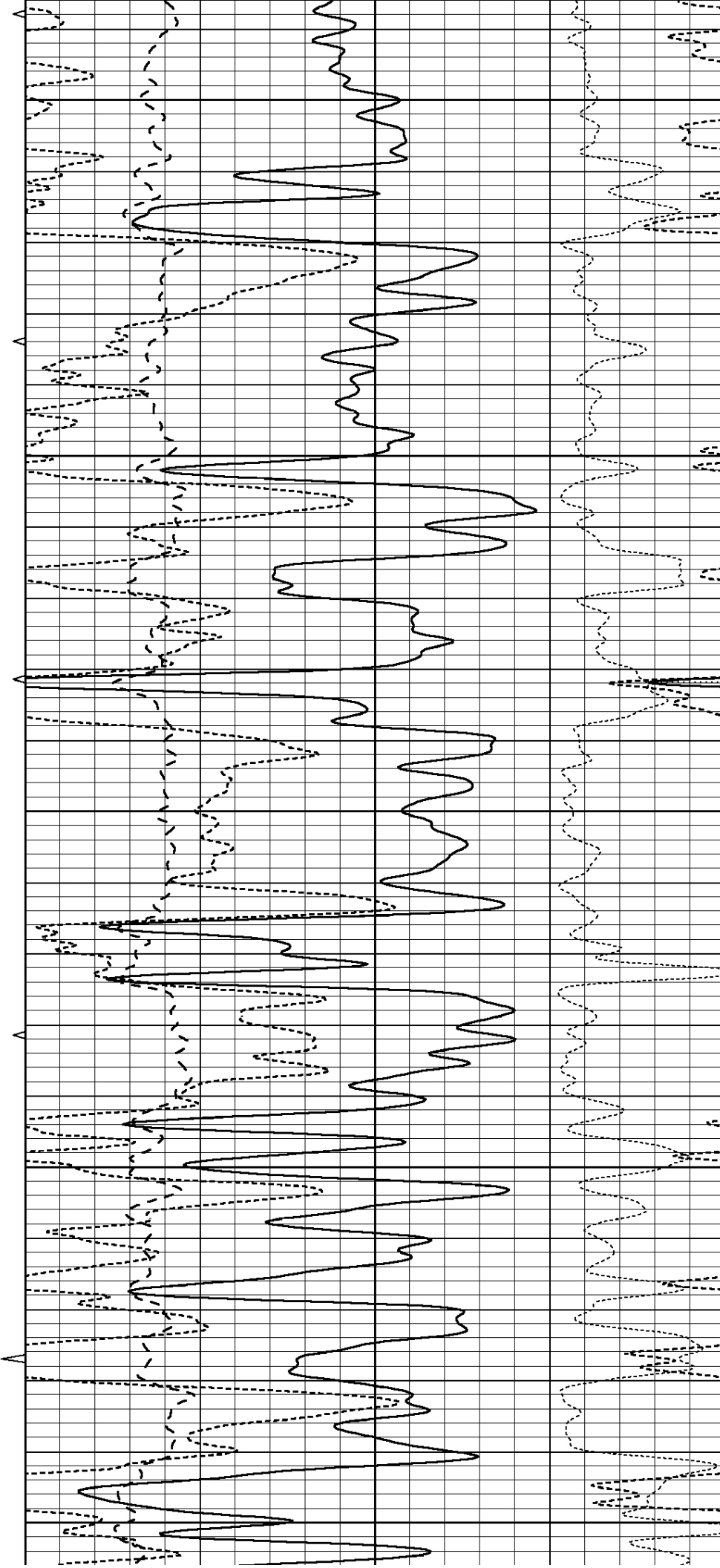
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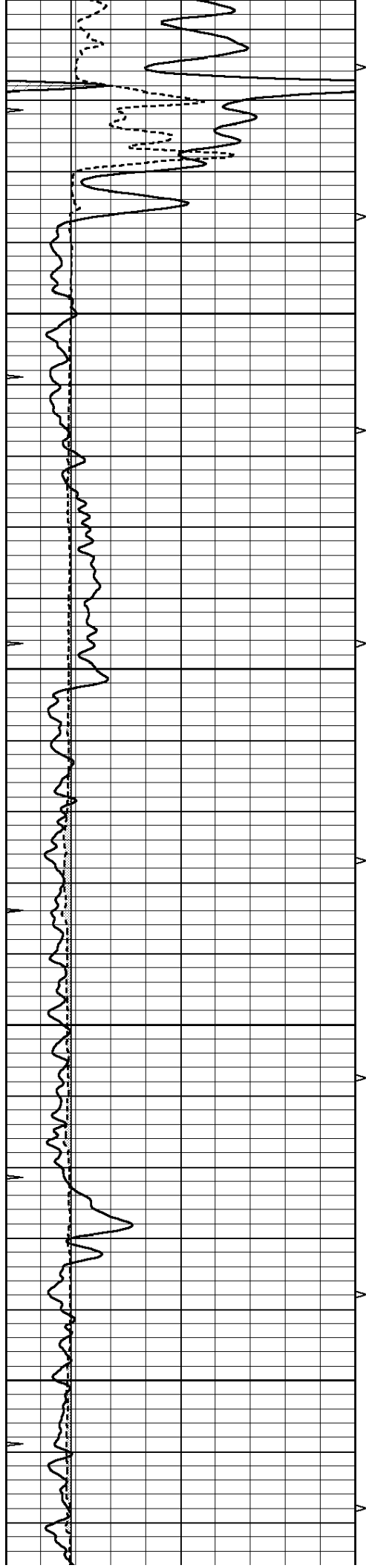
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2650

2700

2750



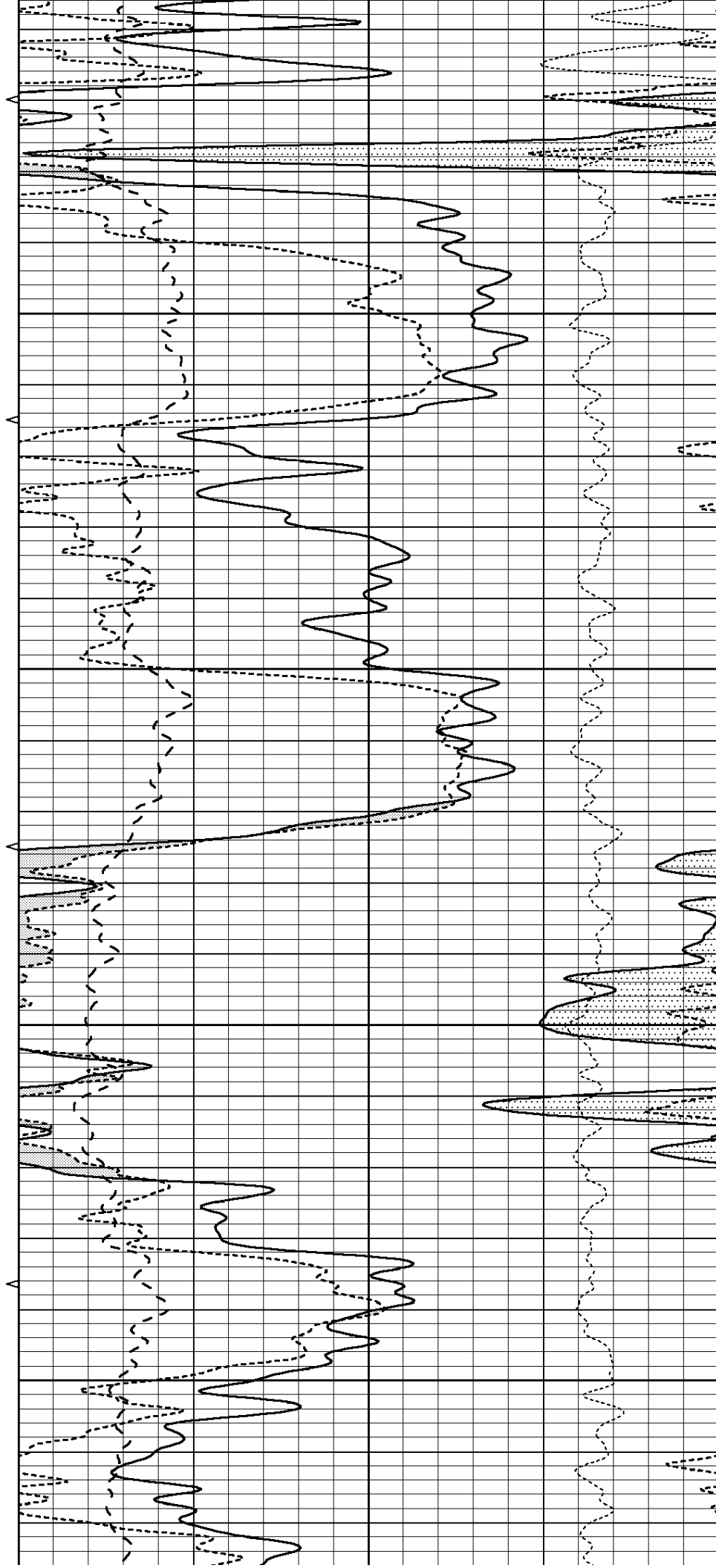


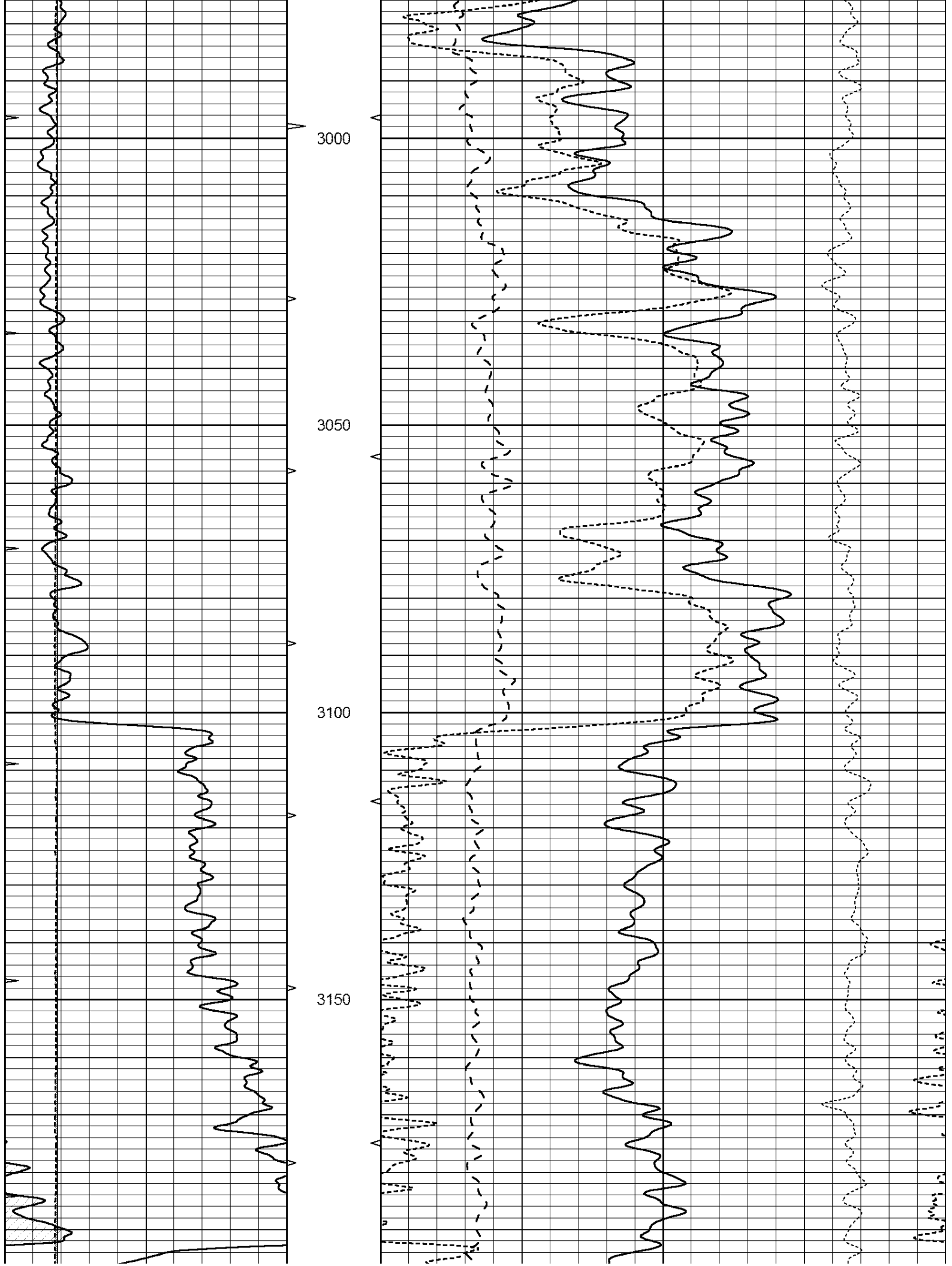
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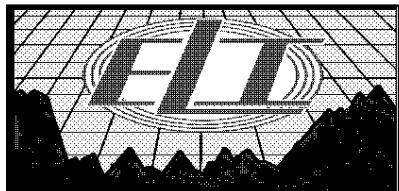
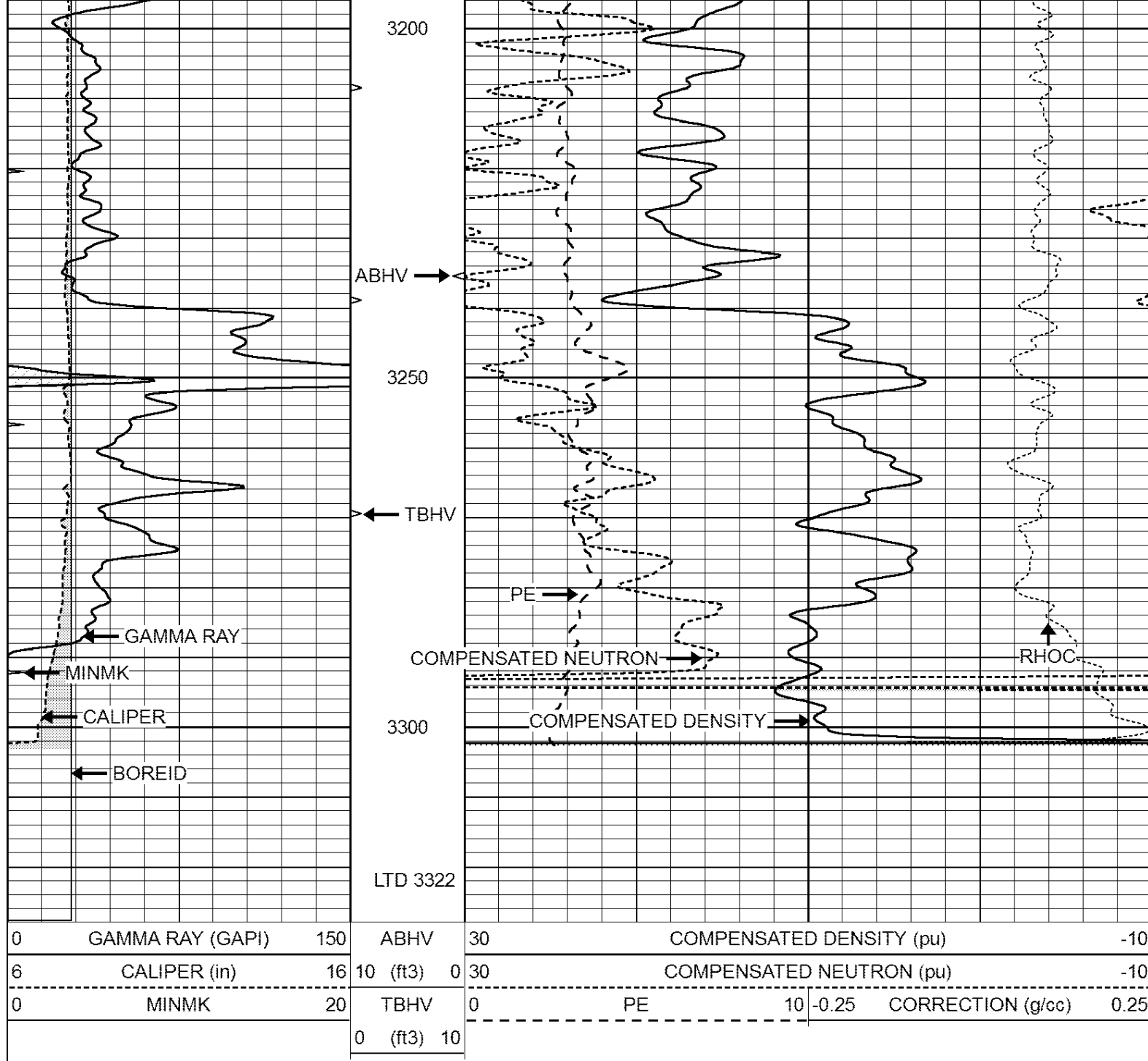
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2900

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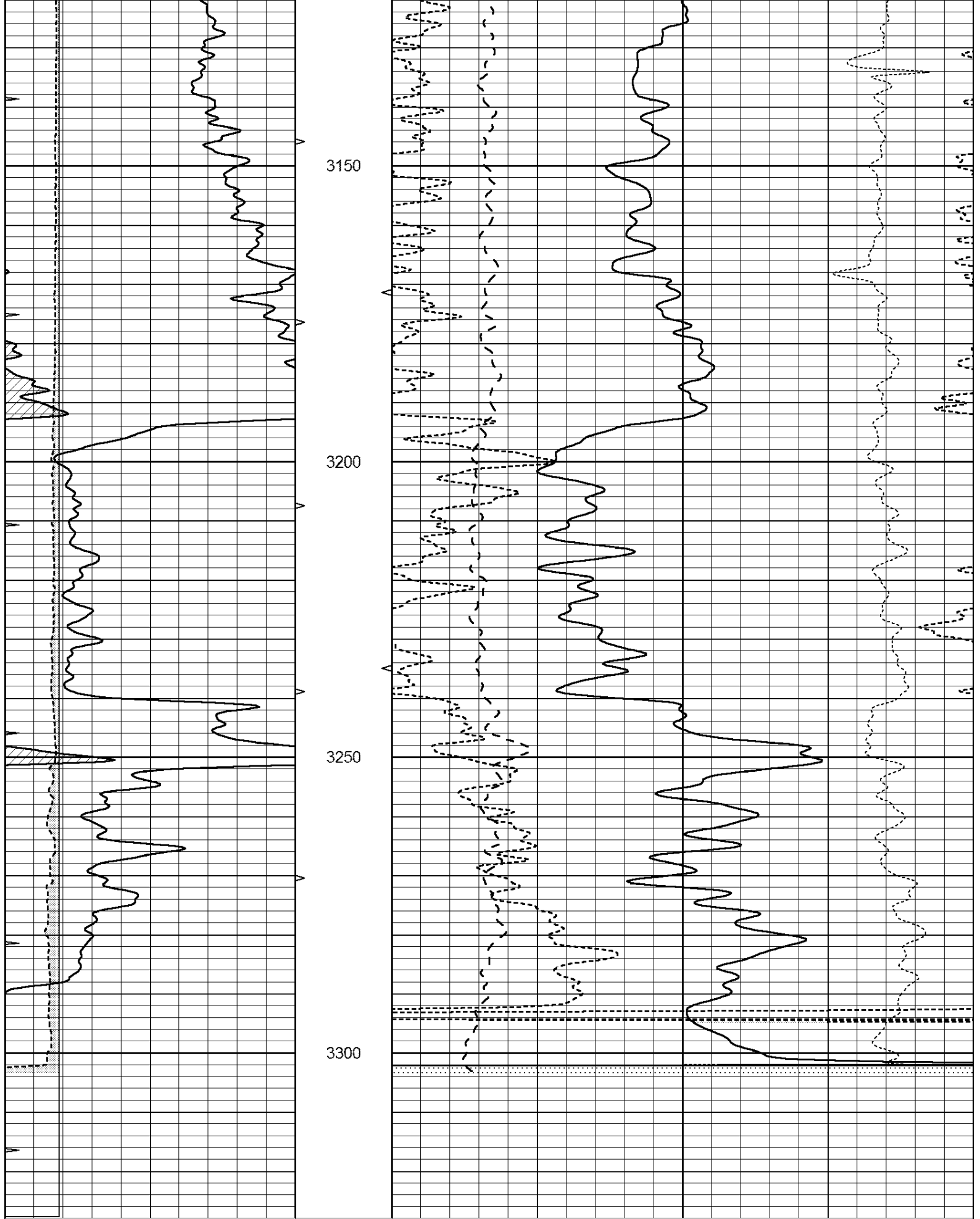




REPEAT SECTION

Database File: 3496pe.db
 Dataset Pathname: pass2.1
 Presentation Format: _ldt_neu
 Dataset Creation: Wed Apr 10 06:26:08 2019
 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	PE	10 -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		30	COMPENSATED NEUTRON (pu)			-10	
0	MINMK	20	TBHV	0	10	PE	-0.25	CORRECTION (g/cc)	0.25

Calibration Report

Database File: 3496pe.db
 Dataset Pathname: pass2.1
 Dataset Creation: Wed Apr 10 06:26:08 2019

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: 001N Model: PRB

Master Calibration

Performed Fri Feb 22 10:21:38 2019

	Background	Magnesium	Aluminum	Sandstone	
Window 1	1650.2	7609.7	2906.5	8386.5	cps
Window 2	1538.2	6635.9	2614.4	7212.4	cps
Window 3	1257.0	3718.7	1765.8	3927.1	cps
Window 4	376.8	375.6	373.4	374.5	cps
Long Space	0.0	5097.7	1076.2	5674.2	cps
Short Space	2.8	1704.3	1106.3	1723.6	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	

Rib Angle : 44.5 Rib Slope : 0.982 Density/Spine Ratio : 0.545
 Spine Angle : 74.5 Spine Slope : 3.599 Spine Intercept : -18.2

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:	6l
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:	Mon Sep 10 14:29:23 2018	
Calibrator Value:	150.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	276.0	cps
Sensitivity:	0.5500	GAPI/cps