



COMPENSATED DENSITY/NEUTRON LOG

Company	PHILLIPS EXPLORATION COMPANY L.C.
Well	WANKER #3-4 SHR
Field	DOWNER CREEK
County	TREGO
State	KANSAS
Company	PHILLIPS EXPLORATION COMPANY L.C.
Well	WANKER #3-4 SHR
Field	DOWNER CREEK
County	TREGO
State	KANSAS
Location:	API # : 15-195-23095-0000
Permanent Datum	1200' FSL & 550' FEL
Log Measured From	GROUND LEVEL Elevation 2479
Drilling Measured From	KELLY BUSHING 5' A.G.L. KELLY BUSHING Elevation K.B. 2484 D.F. 2482 G.L. 2479
Date	10/15/19
Run Number	ONE
Depth Driller	4180
Depth Logger	4179
Bottom Logged Interval	4159
Top Log Interval	3400
Casing Driller	8 5/8" @ 208
Casing Logger	208
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.667
pH / Fluid Loss	8.5/9.2
Source of Sample	FLOWLINE
Rm @ Meas. Temp	1.1 @ 66F
Rmt @ Meas. Temp	.83 @ 66F
Rmc @ Meas. Temp	1.32 @ 66F
Source of Rmt / Rmc	MEASURED
Rm @ BHT	.61 @ 118F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	///
Maximum Recorded Temperature	118F
Equipment Number	1523
Location	HAYS, KANSAS
Recorded By	GUS PFANENSTIEL
Witnessed By	PAT DEENIHAN

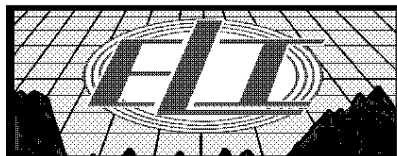
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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on 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

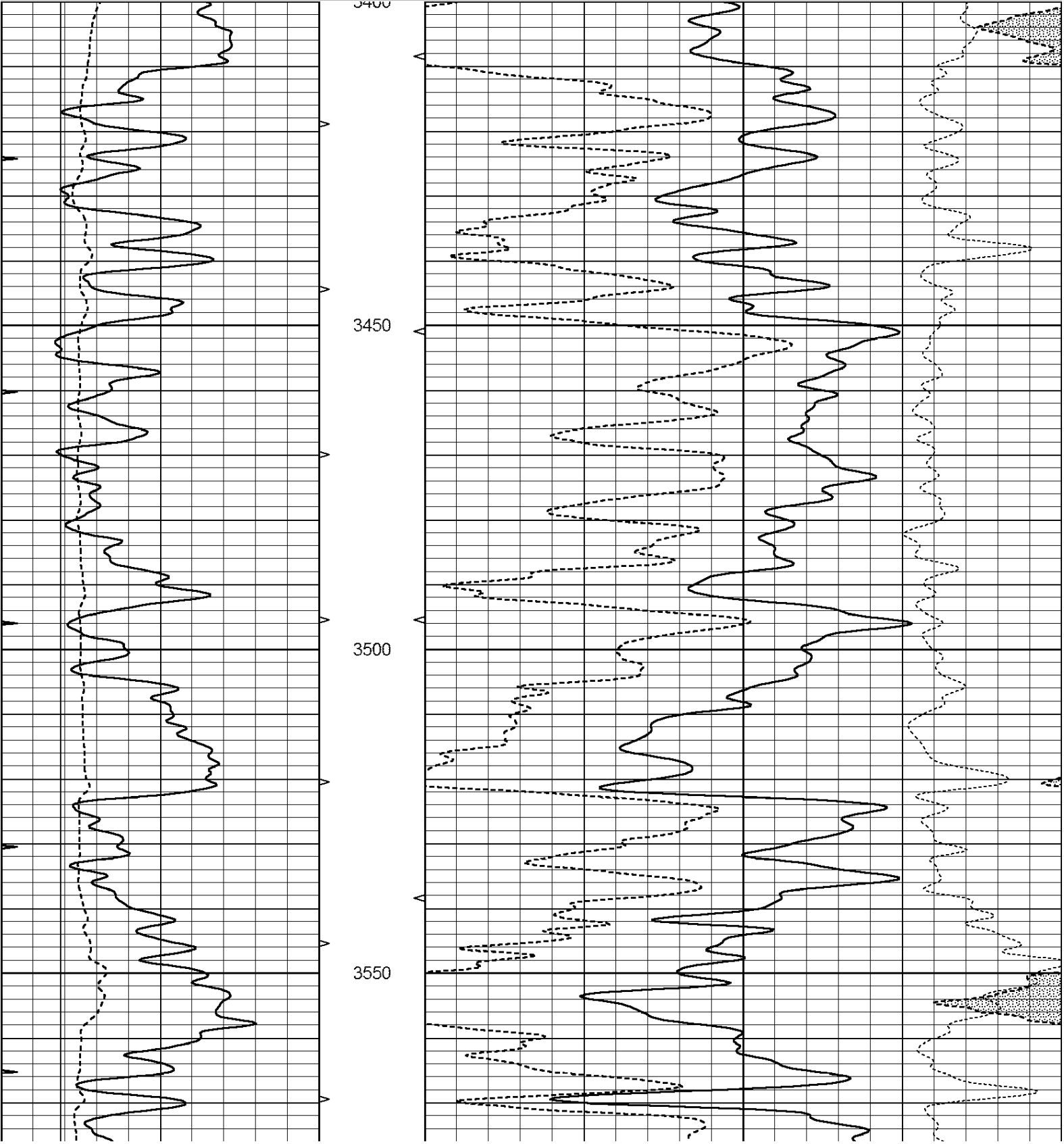
DIRECTIONS
WAKEENEY SOUTH TO LANDFILL, WEST 5 MILES
SOUTH INTO.

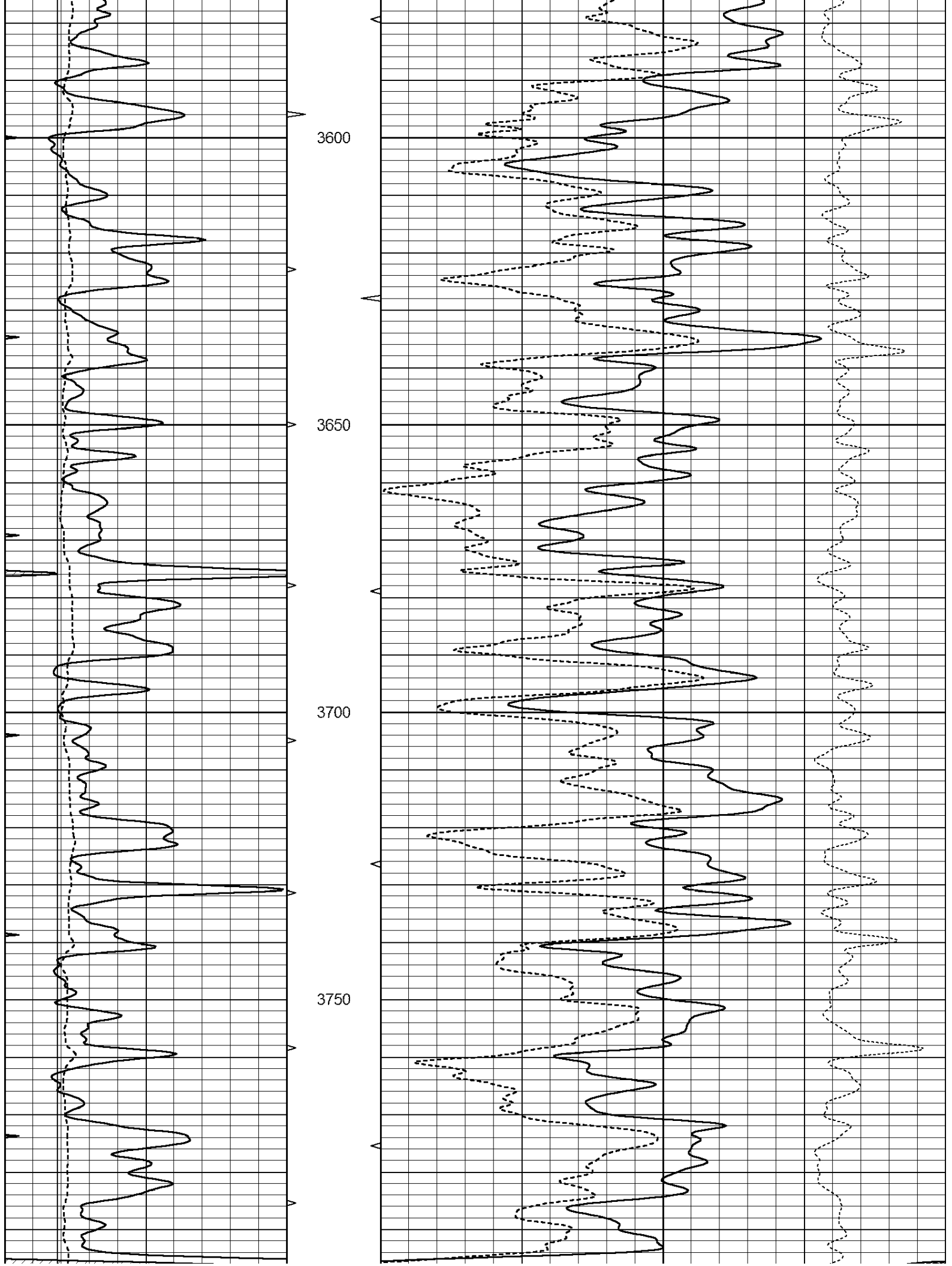


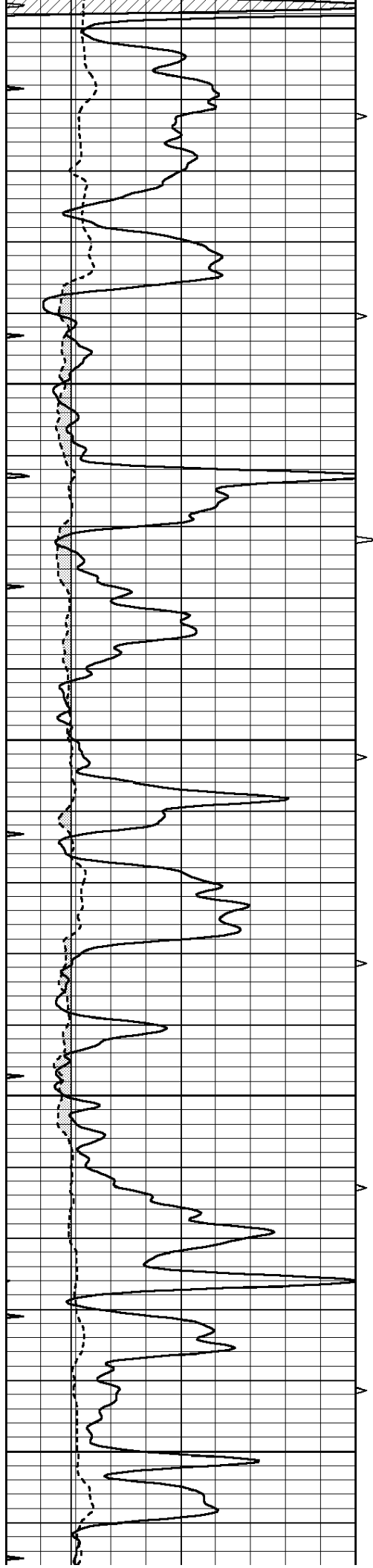
MAIN PASS

Database File: 4098ddn.db
Dataset Pathname: pass4.1
Presentation Format: den_neu
Dataset Creation: Tue Oct 15 15:14:50 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		







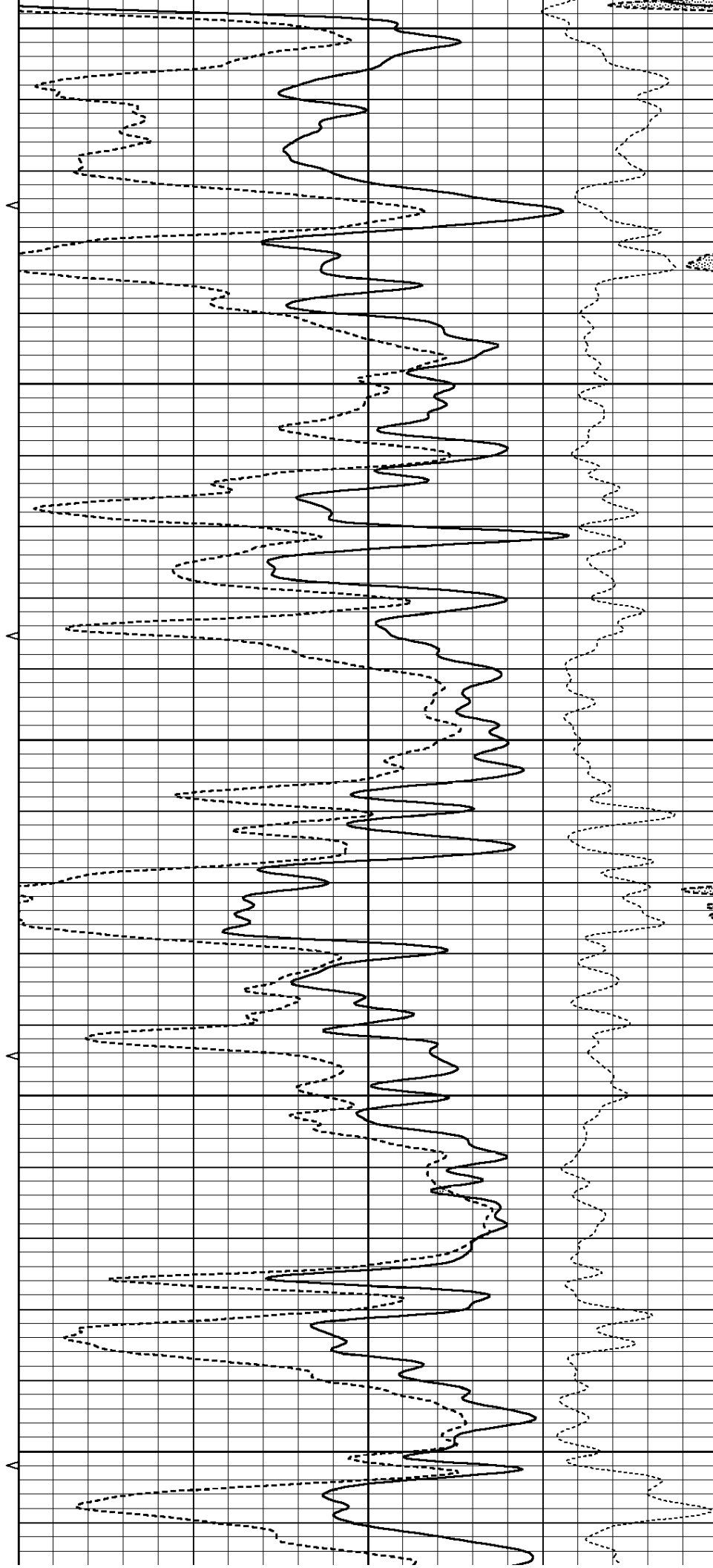
3800

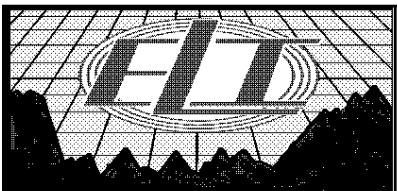
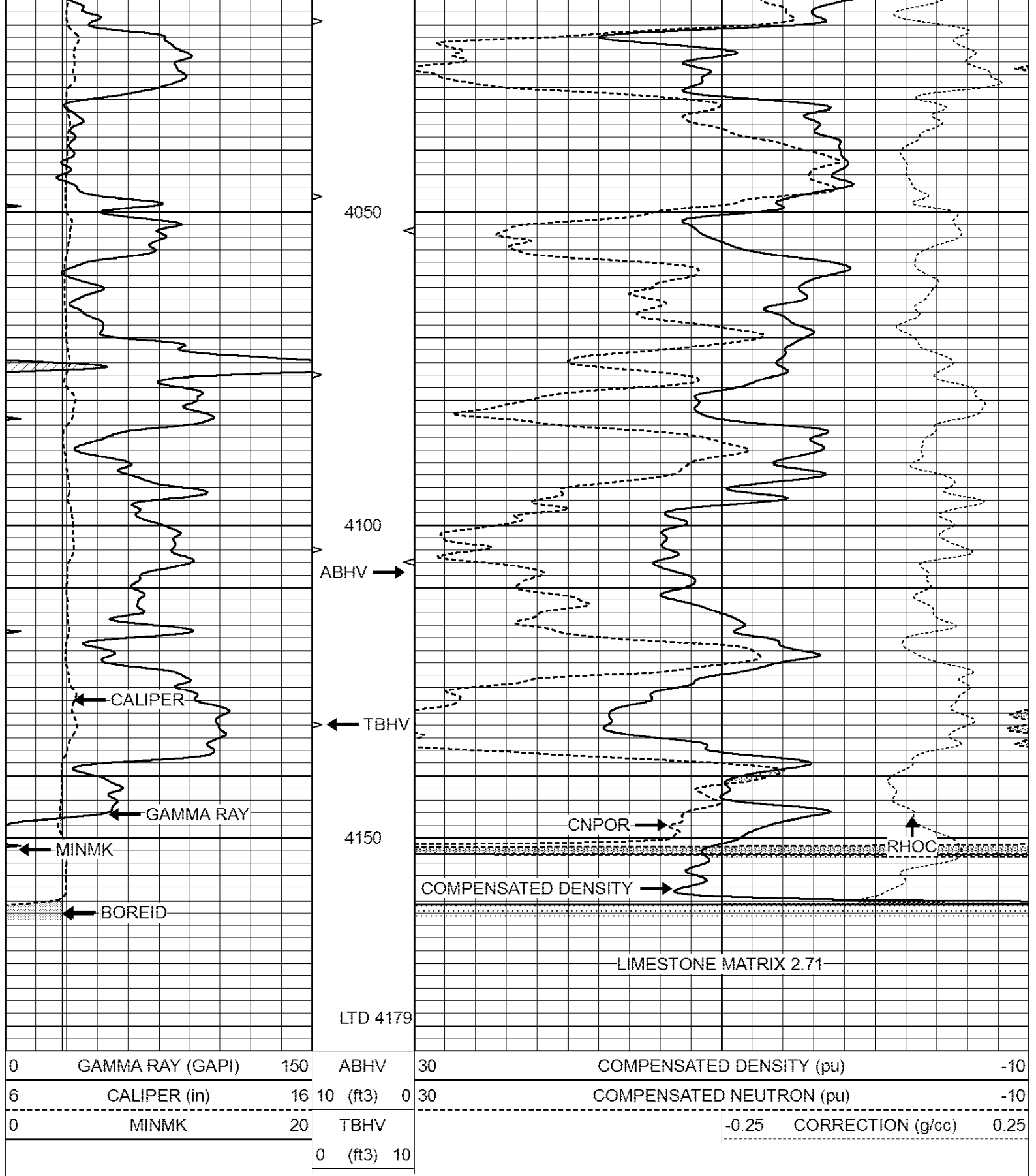
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3900

3950

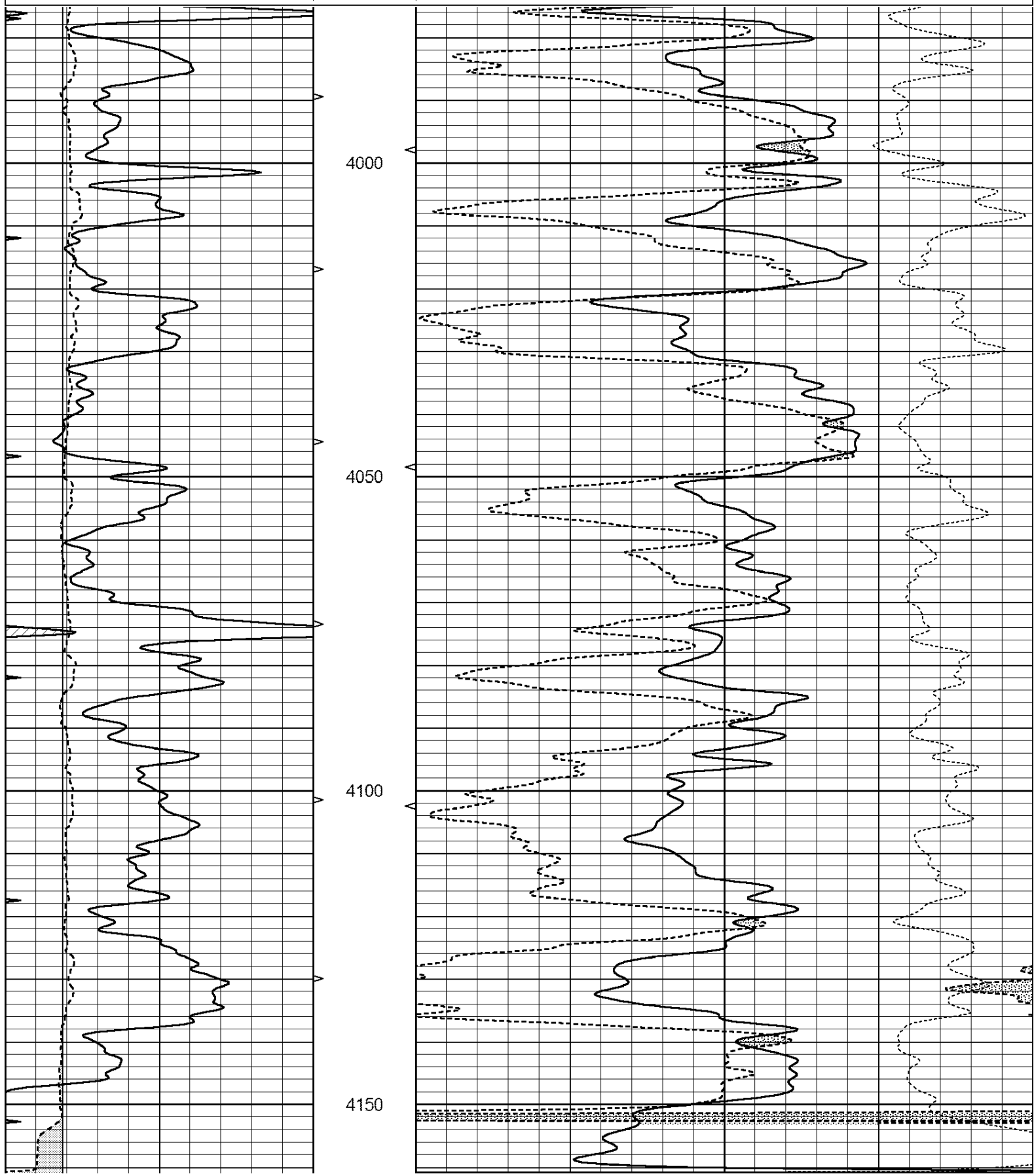
4000





REPEAT SECTION

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		



Database File: 4098ddn.db Dataset Pathname: pass3.1 Dataset Creation: Tue Oct 15 15:18:16 2019 by Calc Open-Cased 090629 Calibration Report									
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: 006 Model: PRB									
Master Calibration									
Performed Fri Feb 22 09:59:16 2019									
Background Magnesium Aluminum Sandstone									

Window 1	1164.1	7287.2	2529.1	8656.3	cps
Window 2	1091.2	5350.1	2037.8	6279.8	cps
Window 3	821.7	2635.2	1183.7	2961.9	cps
Window 4	277.9	276.4	275.2	279.7	cps
Long Space	0.0	4355.6	946.5	5188.6	cps
Short Space	1.6	1496.1	994.4	1563.6	cps
Rho		1.7100	2.5960	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	
Rib Angle	: 44.8	Rib Slope	: 0.993	Density/Spine Ratio	: 0.569
Spine Angle	: 74.8	Spine Slope	: 3.682	Spine Intercept	: -18.6

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					
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Serial Number:		6I			
Tool Model:		G			

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

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					
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POST-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space Long Space	cps cps	pu	pu
2)	Short Space Long Space	cps cps	pu	pu
3)	Short Space Long Space	cps 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	