

COMPENSATED DENSITY / NEUTRON LOG

Company	PHILLIPS EXPLORATION CO.	Company	PHILLIPS EXPLORATION COMPANY, L.C.
Well	VREELAND #5-13	Well	VREELAND #5-13
Field	W - L SOUTH	Field	W - L SOUTH
County	TREGO	County	TREGO
State	KANSAS	State	KANSAS
Location:	API # : 15-195-23162-0000	Other Services DIL	
Permanent Datum	300' FSL & 1500' FEL	Elevation	
Log Measured From	E/2 - SE - SW - SE	K.B. 2432	
Drilling Measured From	SEC 13 TWP 11S RGE 24W	D.F. 2430	
		G.L. 2427	
Date	8/3/23		
Run Number	ONE		
Depth Driller	4070		
Depth Logger	4069		
Bottom Logged Interval	4045		
Top Log Interval	3400		
Casing Driller	8 5/8" @ 220'		
Casing Logger	220		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 1,700 PPM	
Density / Viscosity	9.1/68		
pH / Fluid Loss	9.5/8.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.10 @ 96F		
Rmf @ Meas. Temp	.825 @ 96F		
Rmc @ Meas. Temp	1.32 @ 96F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.903 @ 117F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	3:30 P.M.		
Maximum Recorded Temperature	117F		
Equipment Number	922339		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
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.

15-195-23162-0000

Comments

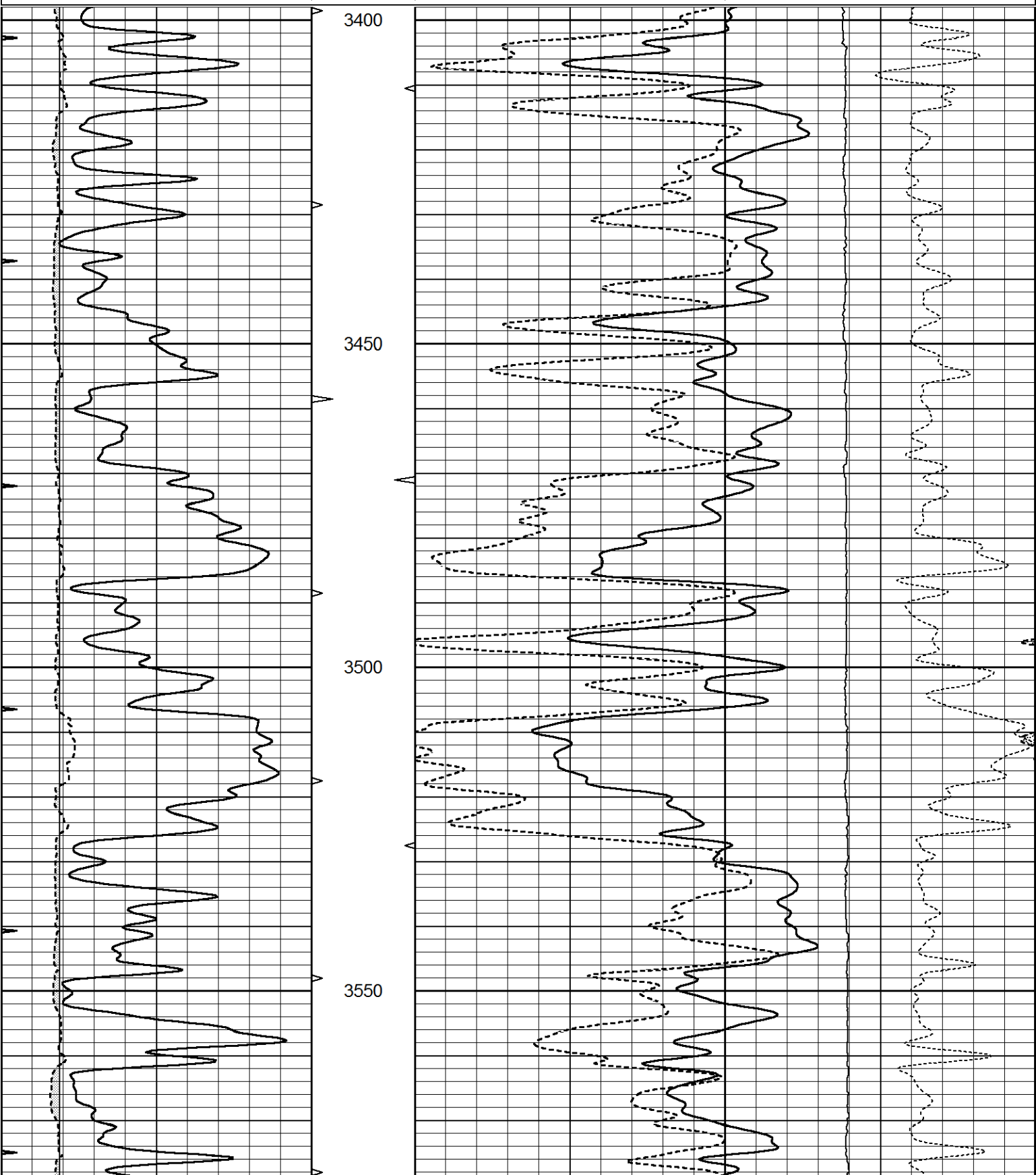
THANK YOU FOR USING ELI WIRELINE HAYS, KANSAS (785) 628-6395
DIRECTIONS
WAKEENEY, KS., 5N. ON HWY 283 TO "RD. B", 4W. TO "RD. 220", 1/2S. TO TANK BATTERY, E. & N.
ON TRAIL 1 1/2 MILES

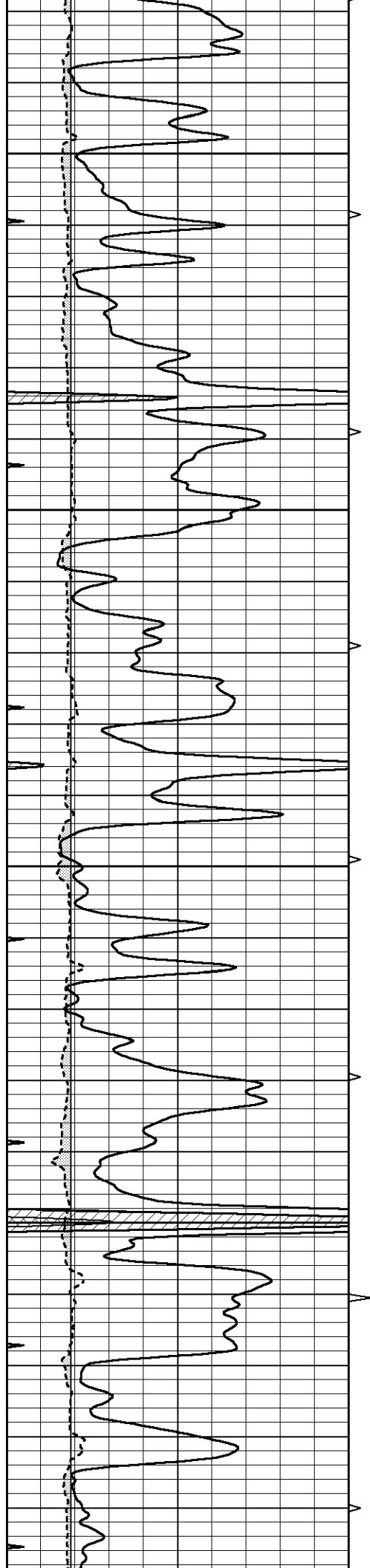


MAIN SECTION

Database File	7312ddn.db
Dataset Pathname	pass3.1M
Presentation Format	_den_neu
Dataset Creation	Thu Aug 03 16:56:46 2023
Charted by	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)			-10	
6	DCAL (in)	16	10 (ft3)	0	30	COMPENSATED NEUTRON (pu)			-10
0	MINMK	20	TBHV			-0.25	CORRECTION (g/cc)	0.25	
			0 (ft3)	10		0	LTEN (lb)	5000	



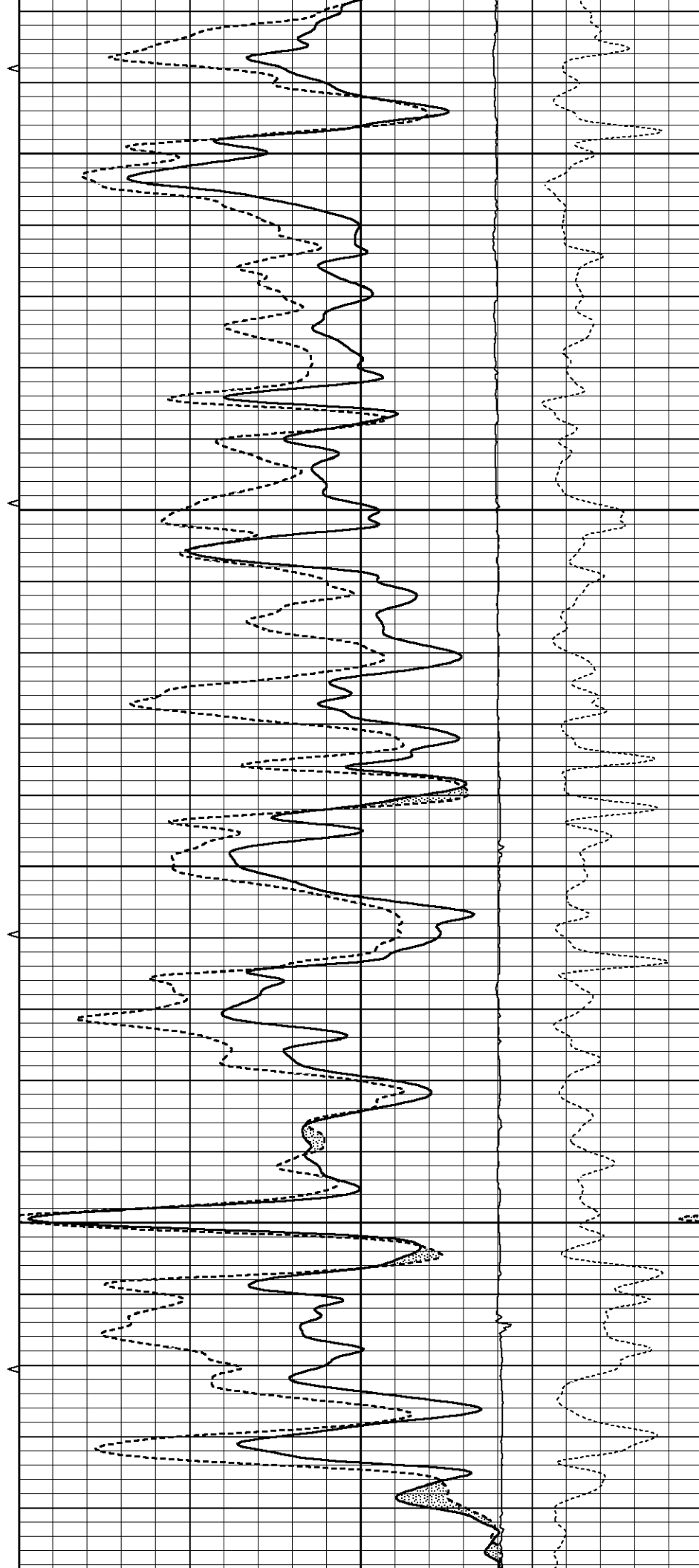


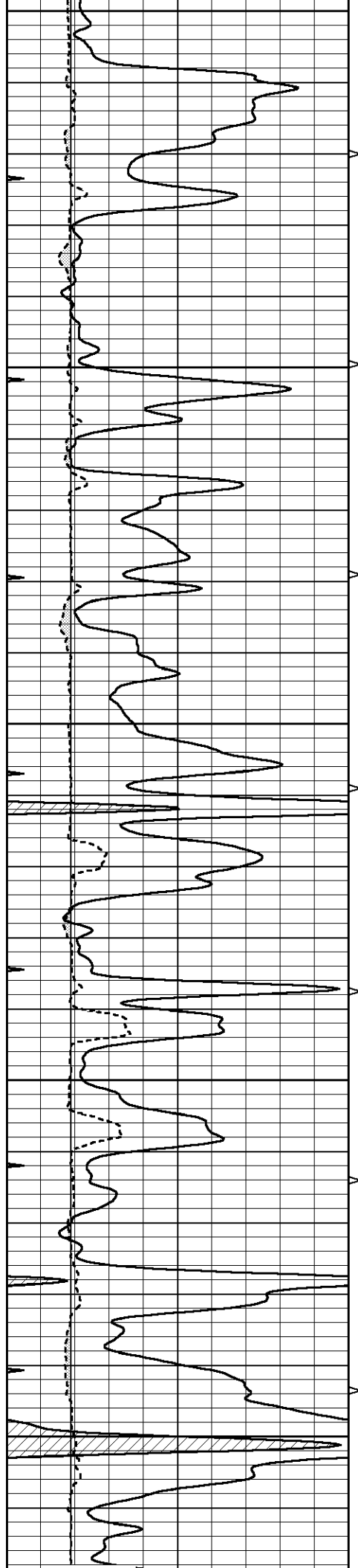
3600

3650

3700

3750





3800

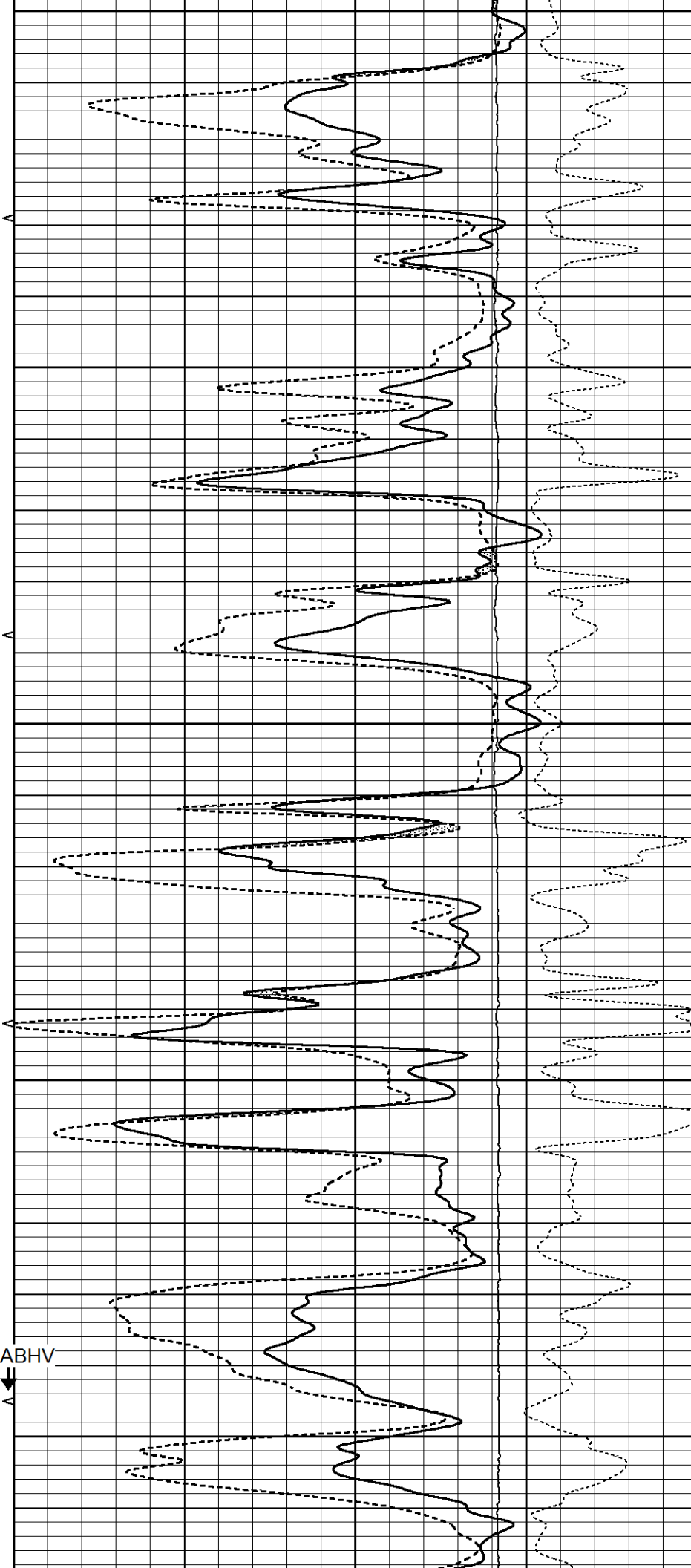
3850

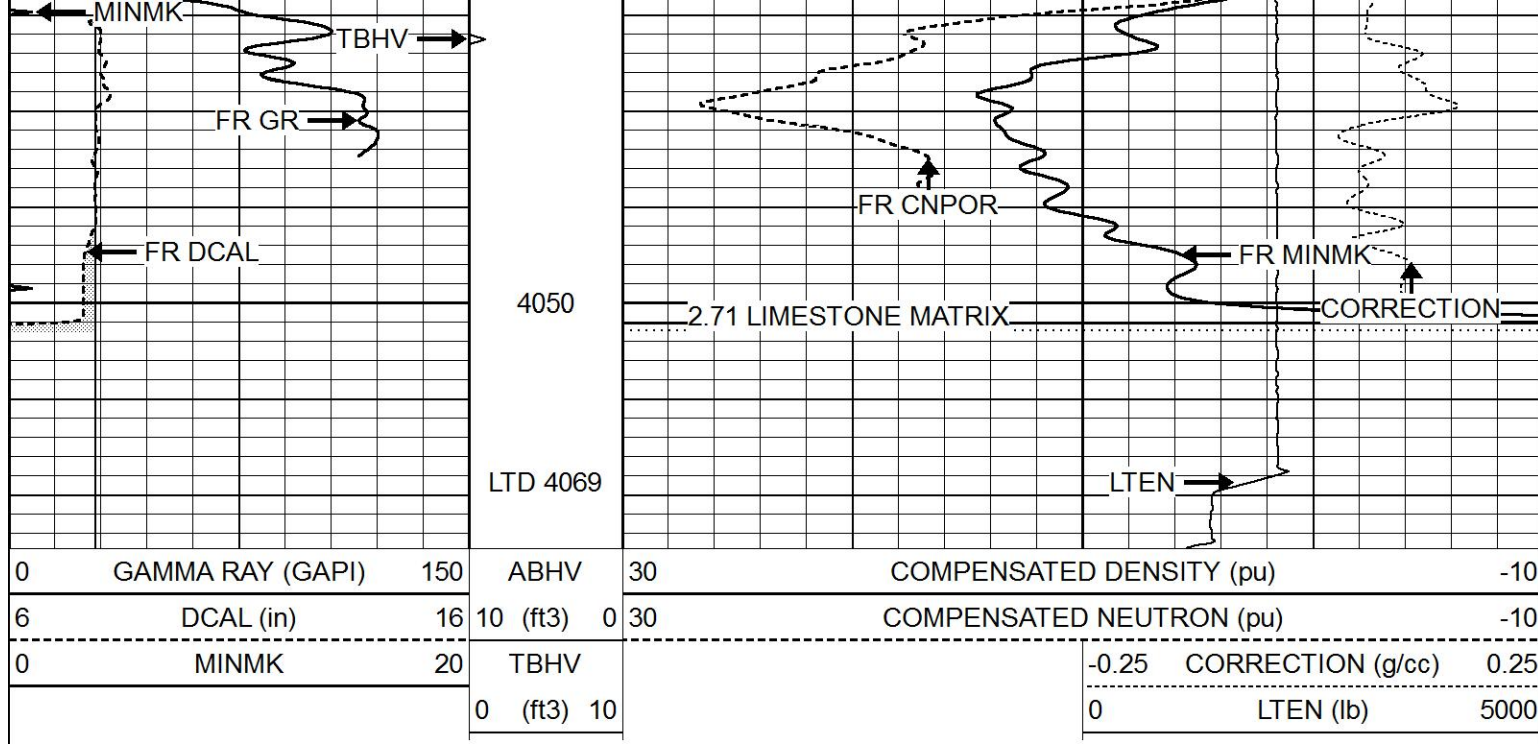
3900

3950

4000

5.5" ABHV

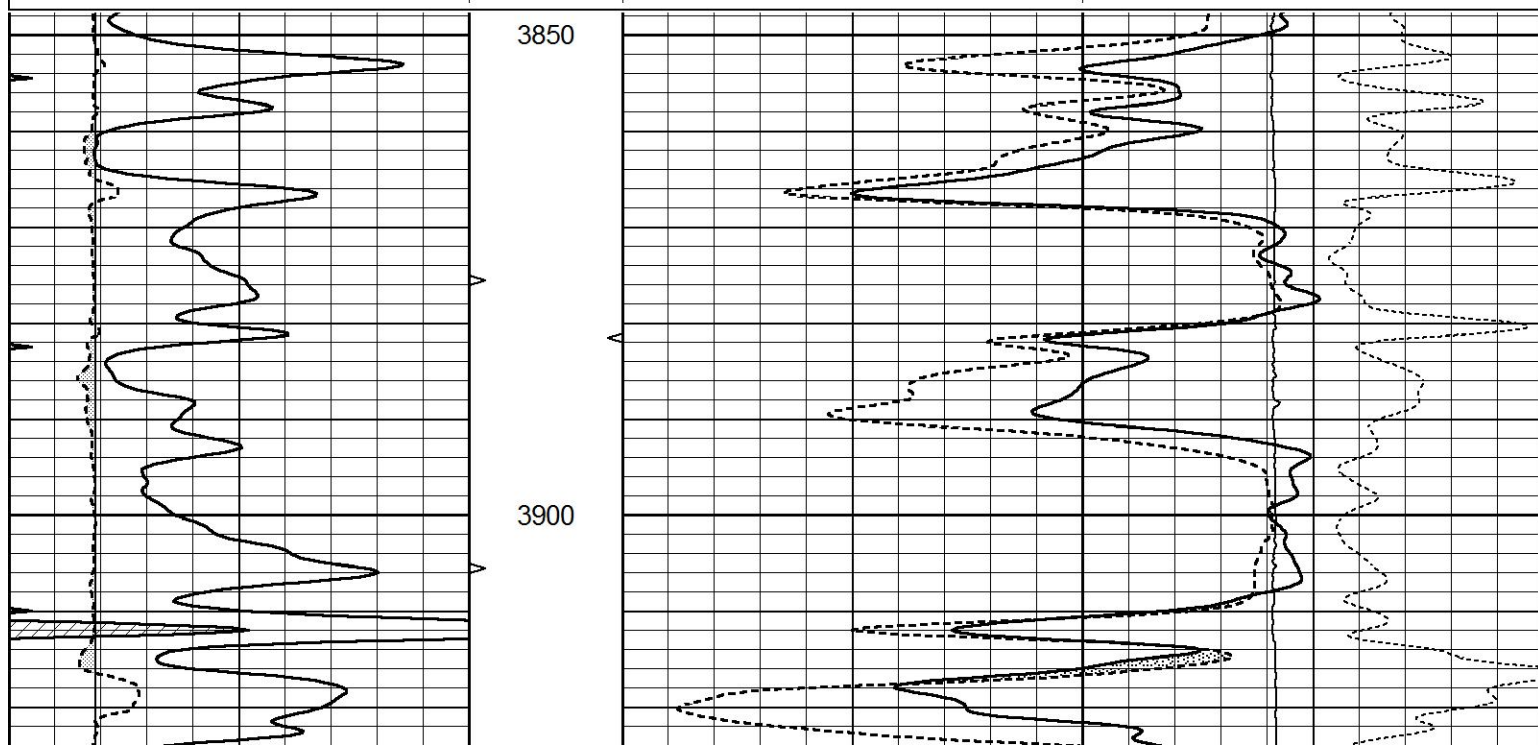


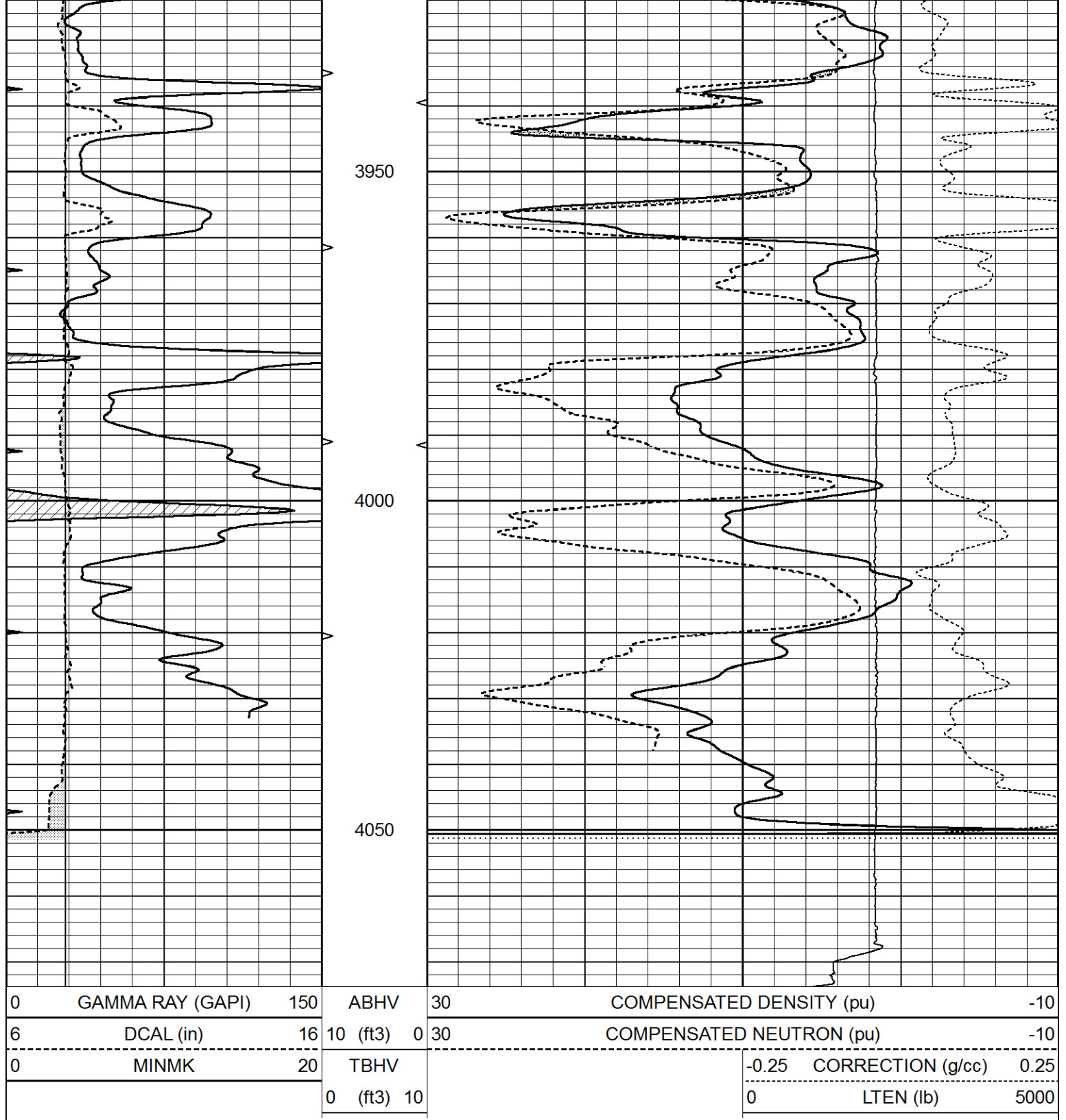


REPEAT SECTION

Database File 7312ddn.db
 Dataset Pathname pass2.1R
 Presentation Format _den_neu
 Dataset Creation Thu Aug 03 16:07:12 2023
 Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)			-10
6	DCAL (in)	16	10 (ft3) 0	30	COMPENSATED NEUTRON (pu)			-10
0	MINMK	20	TBHV		-0.25	CORRECTION (g/cc)	0.25	
			0 (ft3) 10		0	LTEN (lb)	5000	





Calibration Report

Database File 7312ddn.db
Dataset Pathname pass3.1M
Dataset Creation Thu Aug 03 16:56:46 2023

Dual Induction Calibration Report

Serial-Model: DIL7-GEAR
Surface Cal Performed: Mon Jul 24 17:23:53 2023
Downhole Cal Performed: Tue Apr 17 15:38:44 2007
After Survey Verification Performed: Tue Apr 17 15:38:40 2007

Surface Calibration

Readings				References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.019	0.660	V	0.000	400.000	mmho/m	660.000	15.000
Medium	-0.006	0.655	V	0.000	462.500	mmho/m	720.000	-25.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.010	0.665	V	0.000	400.000	mmho/m	610.018	-5.925
Medium	0.009	0.655	V	0.000	400.000	mmho/m	618.983	-5.564

Downhole Calibration								
Readings				References			Results	
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	3.372	400.834	mmho/m	0.556	401.206	mmho/m	1.008	-2.843
Medium	13.557	467.446	mmho/m	9.465	462.114	mmho/m	0.997	-4.055
Shallow	2.521	0.019	V	500.000	2.000	Ohm-m	225.000	0.000

After Survey Verification								
Readings				Targets			Results	
Internal:	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	3.372	400.834	mmho/m	1.008	-2.843
Medium	0.000	0.000	mmho/m	13.557	467.446	mmho/m	0.997	-4.055
Shallow	2.500	0.000	Ohm-m	500.000	2.000	Ohm-m	225.000	0.000

Litho Density Calibration Report								
Serial: 001 Model: PRB								

Master Calibration				Performed Tue Aug 02 14:54:49 2022				
	Background	Magnesium		Aluminum	Aluminum+Fe			
Window 1	1540.1	9840.1		3279.8	3001.8		cps	
Window 2	1435.6	8495.4		2920.3	2720.3		cps	
Window 3	1167.4	4527.9		1868.6	1810.1		cps	
Window 4	344.6	343.5		346.7	342.3		cps	
Long Space	0.0	7059.8		1484.8	1284.7		cps	
Short Space	3.3	2502.7		1618.3	1368.5		cps	
Rho		1.7100		2.5900	0.0000		g/cc	
Pe		2.0000		2.7500	5.7900			
Rib Angle	: 44.4	Rib Slope	: 0.979	Density/Spine Ratio		: 0.544		
Spine Angle	: 74.4	Spine Slope	: 3.576	Spine Intercept		: -19.1		

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				
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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: 070808PMC
Tool Model: NABORS

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: Tue Aug 01 12:36:48 2023

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.3000 GAPI/cps