



MIDWEST WIRELINE

MICRORESISTIVITY
LOG

Company The Bill Bowman Oil Company		Company The Bill Bowman Oil Company	
Well	PL Hilgers #1	Well	PL Hilgers #1
Field	Baumgarten	Field	Baumgarten
County	Rooks	County	Rooks
State	Kansas	State	Kansas
Location: API #: 15-163-24458-00-00		Other Services	
1650 FNL & 1650 FWL		CNL/CDL DIL	
Permanent Datum	Ground Level	Elevation	2188
Log Measured From	Kelly Bushing	K.B.	2193
Drilling Measured From	Kelly Bushing	D.F.	
		G.L.	2188
Date	9/11/2022		
Run Number	One		
Depth Driller	3698		
Depth Logger	3698		
Bottom Logged Interval	3697		
Top Log Interval	3000		
Casing Driller	8.625 @ 227		
Casing Logger	221		
Bit Size	7.875		
Type Fluid in Hole	Chemical		
Salinity, ppm CL	2300		
Density / Viscosity	9.1	52	
pH / Fluid Loss	11.0	5.4	
Source of Sample	Flowline		
Rm @ Meas. Temp	0.74 @ 80		
Rmf @ Meas. Temp	0.56 @ 80		
Rmc @ Meas. Temp	1.00 @ 80		
Source of Rmf / Rmc	Charts		
Rm @ BHT	0.52 @ 113		
Operating Rig Time	2 Hours		
Max Rec. Temp. F	113		
Equipment Number	P-24		
Location	Hays		
Recorded By	D. Schmidt		
Witnessed By	Roger Moses		

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All interpretations are opinions based on inferences from electrical or other measurements and Midwest Wireline LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Midwest Wireline LLC will not 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.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

Plainville,
4 East, 3/4 North,
East into

Log Measured From: Kelly Bushing 5 Ft. Above Permanent Datum

THANK YOU FOR USING MIDWEST WIRELINE LLC
785-625-3858

Your Midwest Wireline Crew		This Log Record Was Witnessed By	
Engineer: D. Schmidt		Primary Witness: Roger Moses	
Operator:		Secondary Witness:	
Operator:		Secondary Witness:	
Operator:		Secondary Witness:	

Log Variables

DatabaseC:\ProgramData\Warrior\Data\bowman_hilger 1.db
Dataset field/well/stkml/pass3.12/_vars_

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 113	in 5.5	in 0	g/cc 1	2	g/cc 2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m 0	mmho/m 0	mV 85	degF 60	Off	ft 3698

Variable Description

A : Cement Factor (a)
BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
FLUIDDEN : Fluid Density
M : Cement Exp (m)
MATRXDEN : Matrix Density

NPORSEL : Neutron Porosity Curve Select
PERFS : Perforation Flag
SNDERR : Deep Sonde Error Correction
SNDERRM : Medium Sonde Error Correction
SPSHIFT : S.P. Baseline Offset
SRFTEMP : Surface Temperature
SZCOR : CN Size Cor. ?
TDEPTH : Total Depth



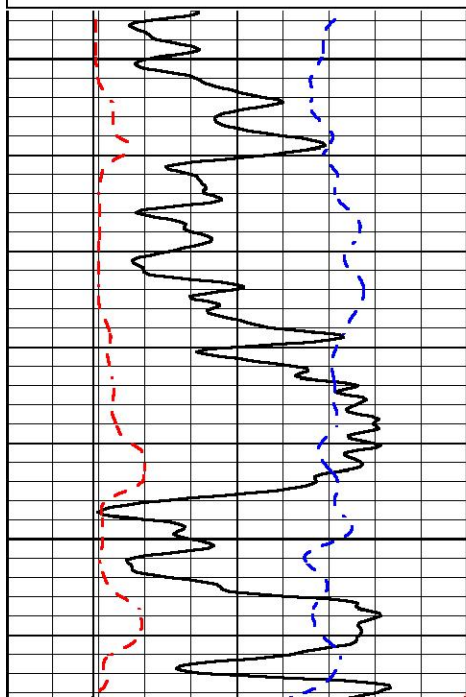
DETAIL SECTION

MAIN PASS

Database File bowman_hilger 1.db
Dataset Pathname stkml/pass3.1
Presentation Format _micro
Dataset Creation Sun Sep 11 05:23:21 2022
Charted by Depth in Feet scaled 1:240

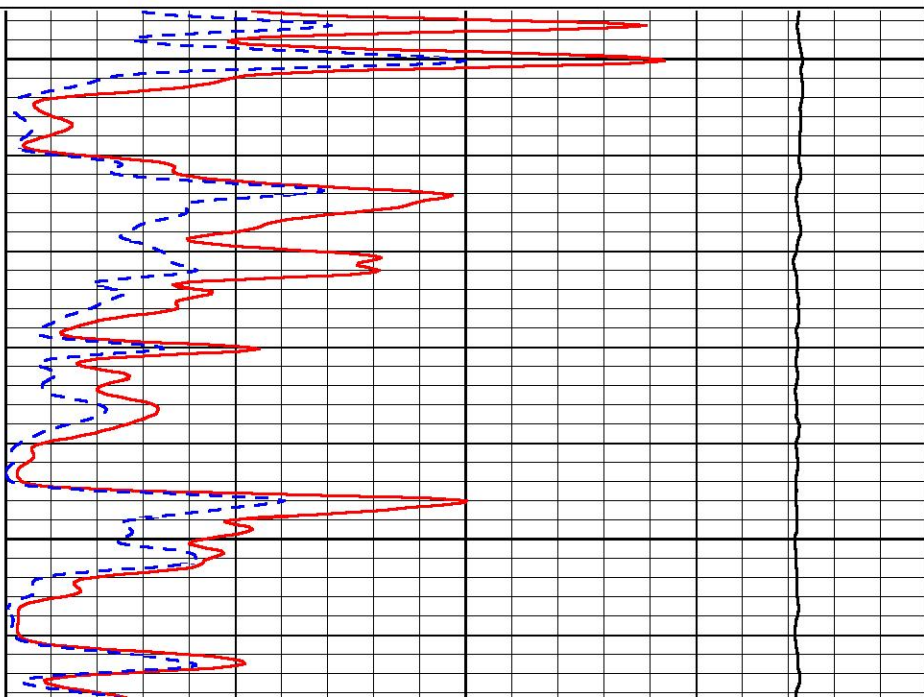
0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
2.875	mccl (in)	7.875
-200	sp (mV)	0

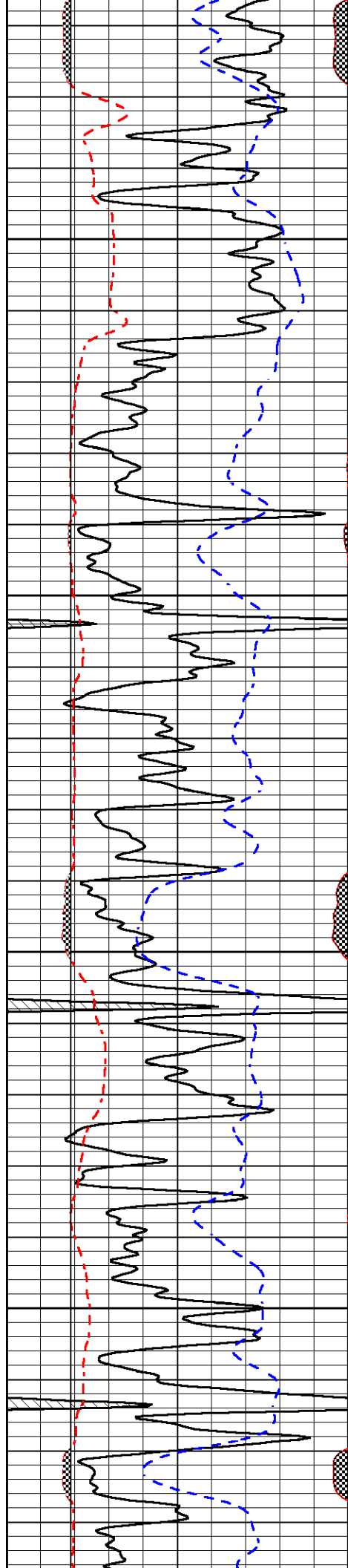
0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0



3000

3050



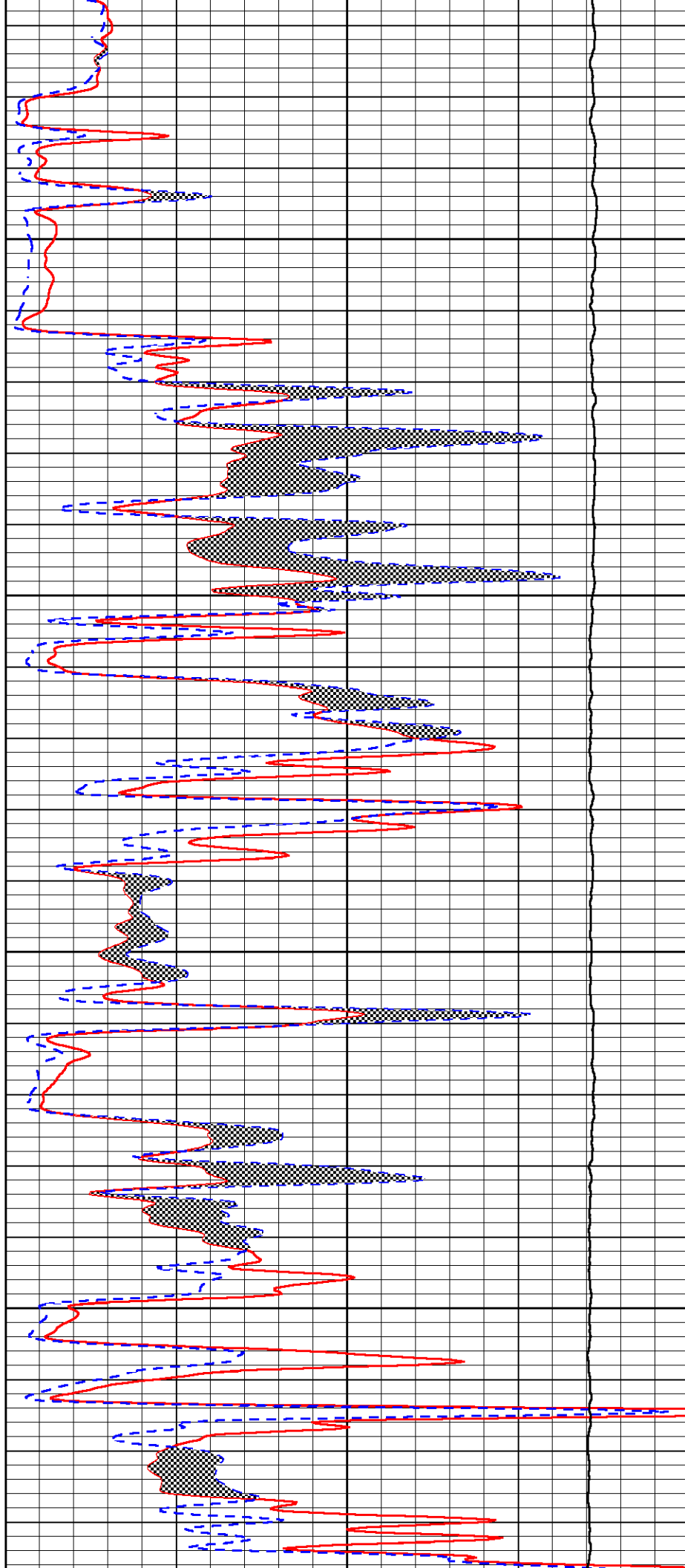


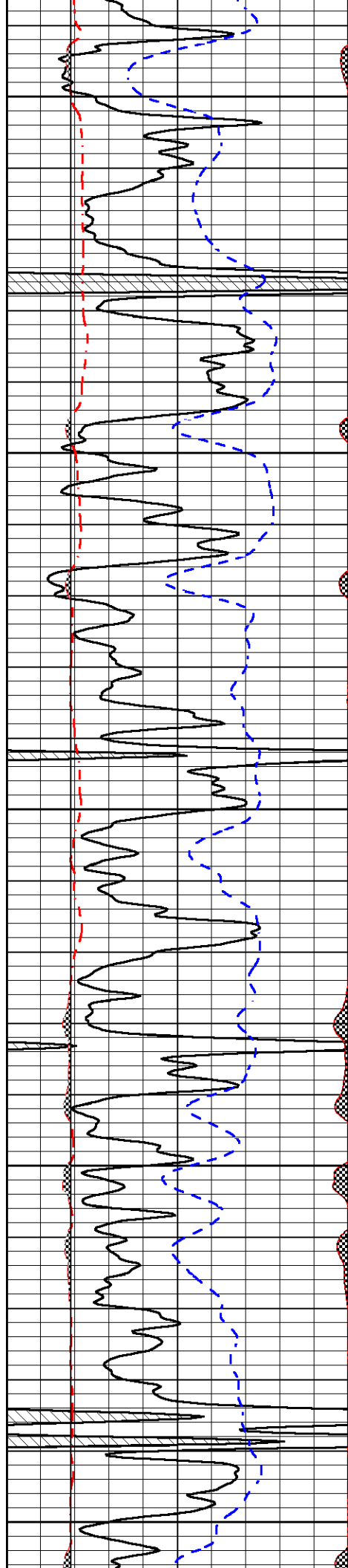
3100

3150

3200

3250





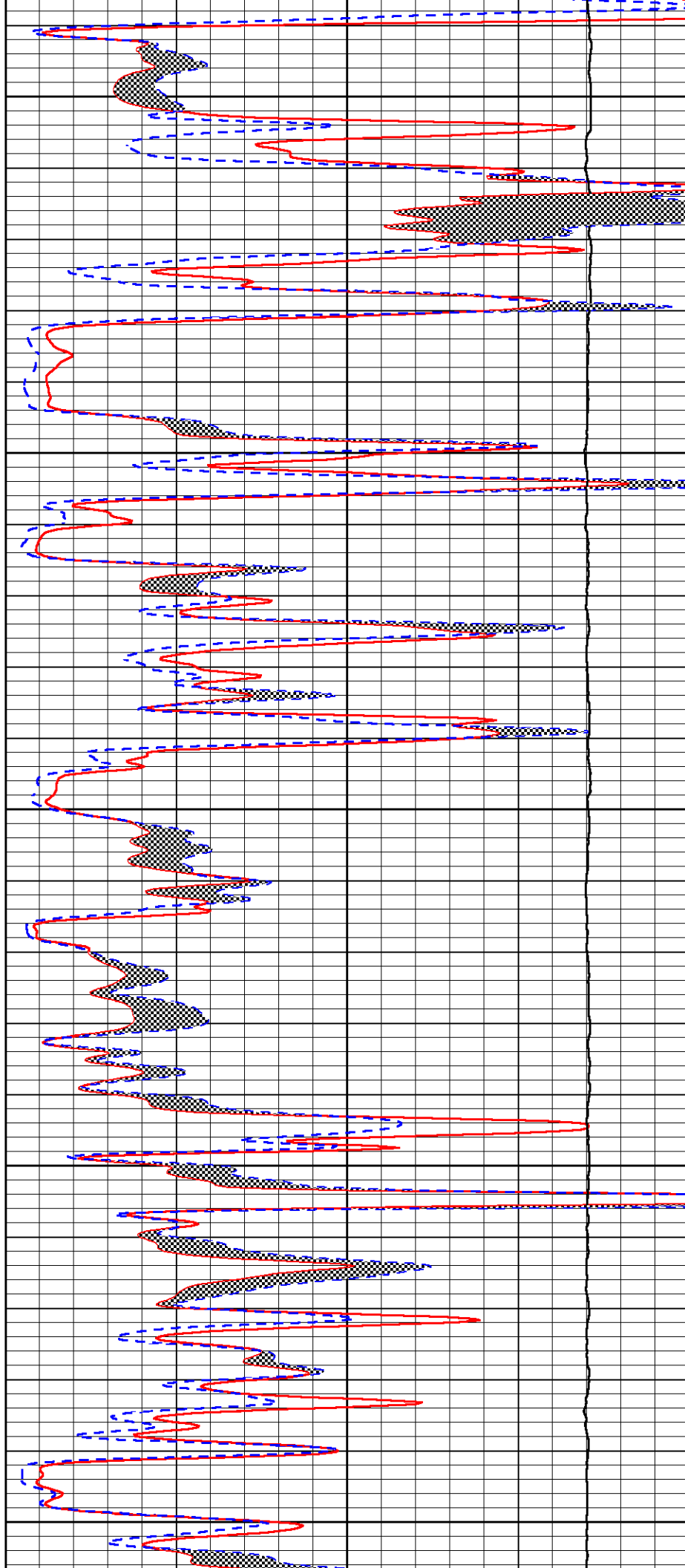
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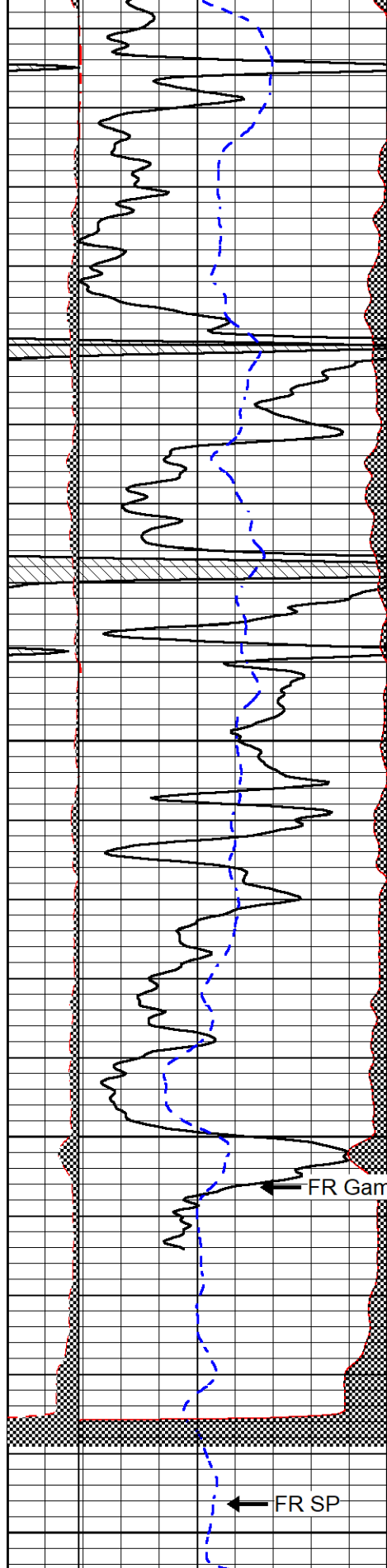
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3400

3450

3500





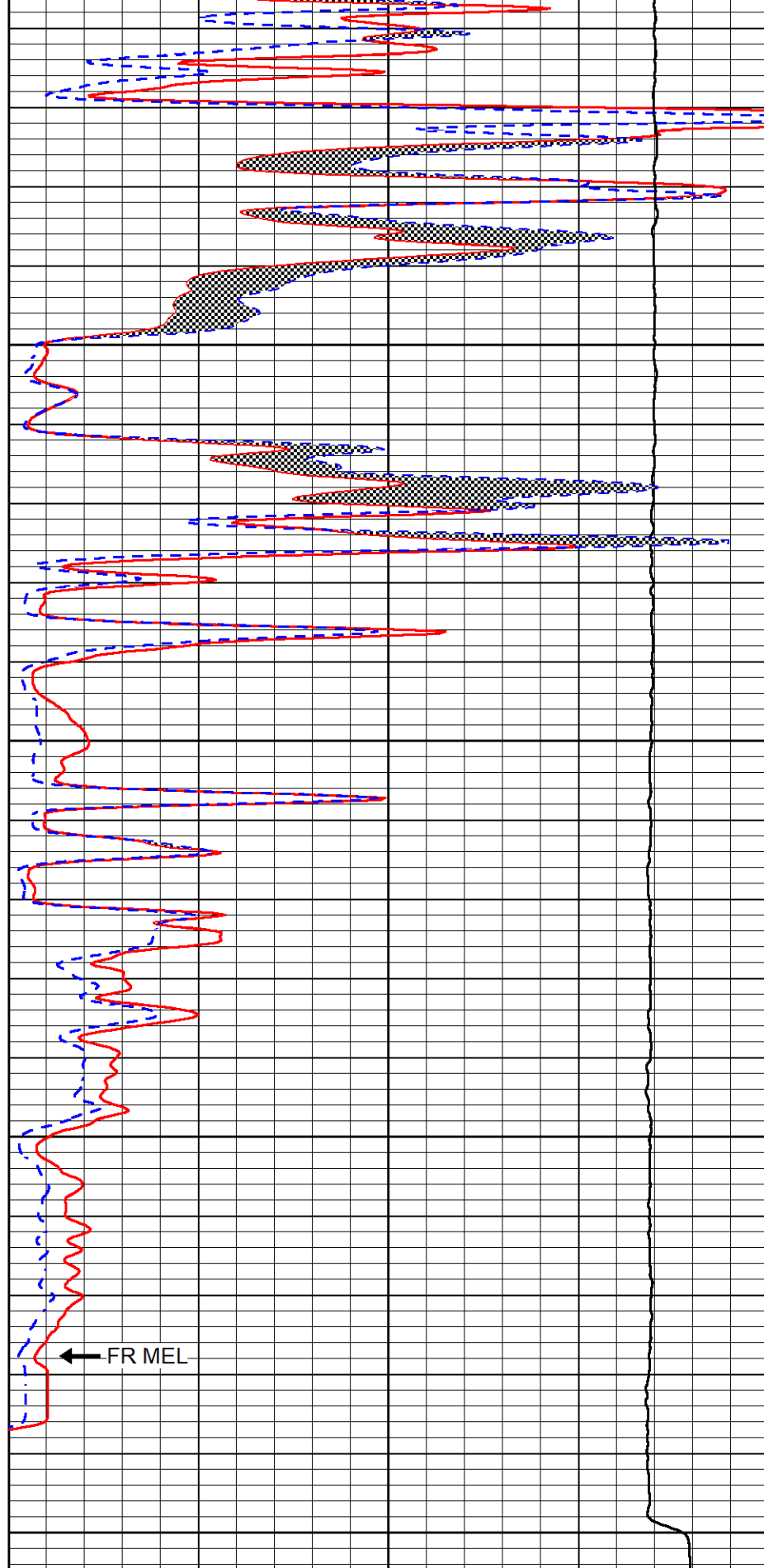
0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
2.875	mcal (in)	7.875
-200	sp (mV)	0

3550

3600

3650

3700



0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0



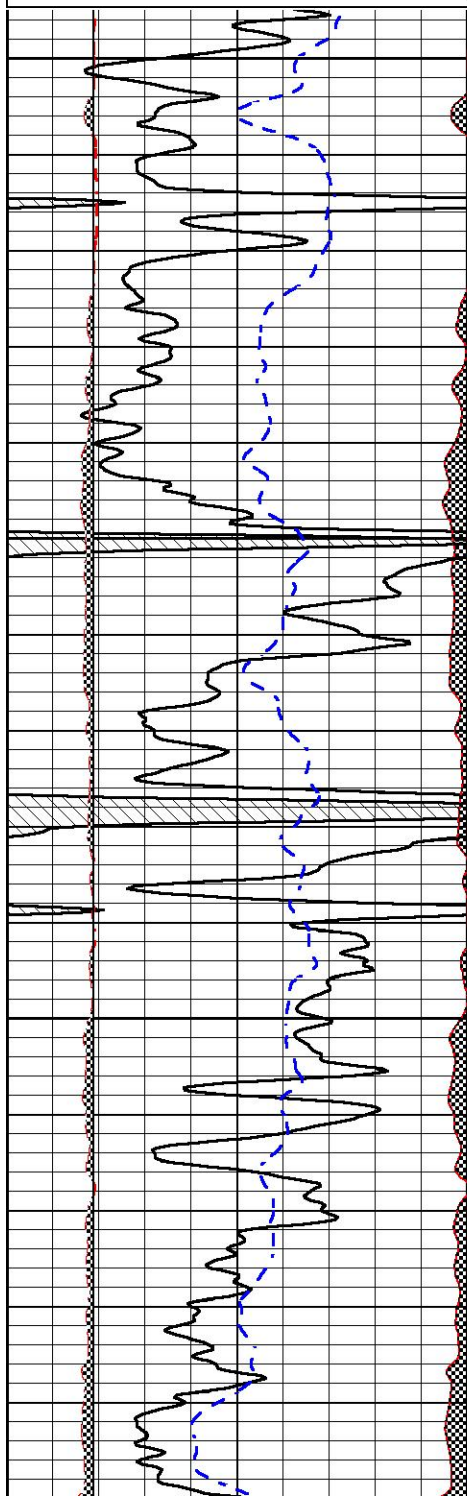
REPEAT SECTION

REPEAT PASS

Database File bowman_hilger 1.db
Dataset Pathname stkml/pass2.1
Presentation Format _micro
Dataset Creation Sun Sep 11 05:04:16 2022
Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
2.875	mcal (in)	7.875
-200	sp (mV)	0

0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0

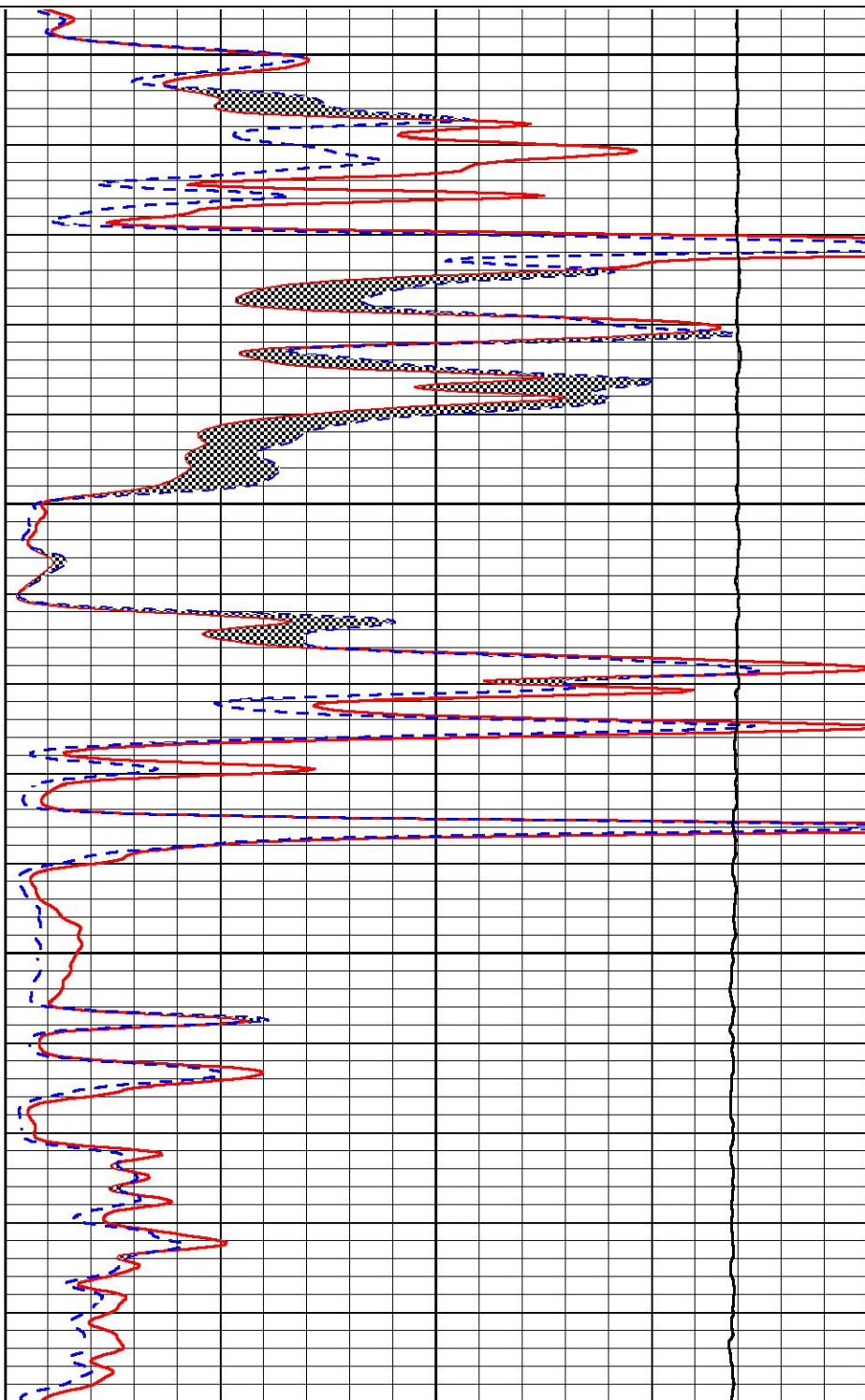


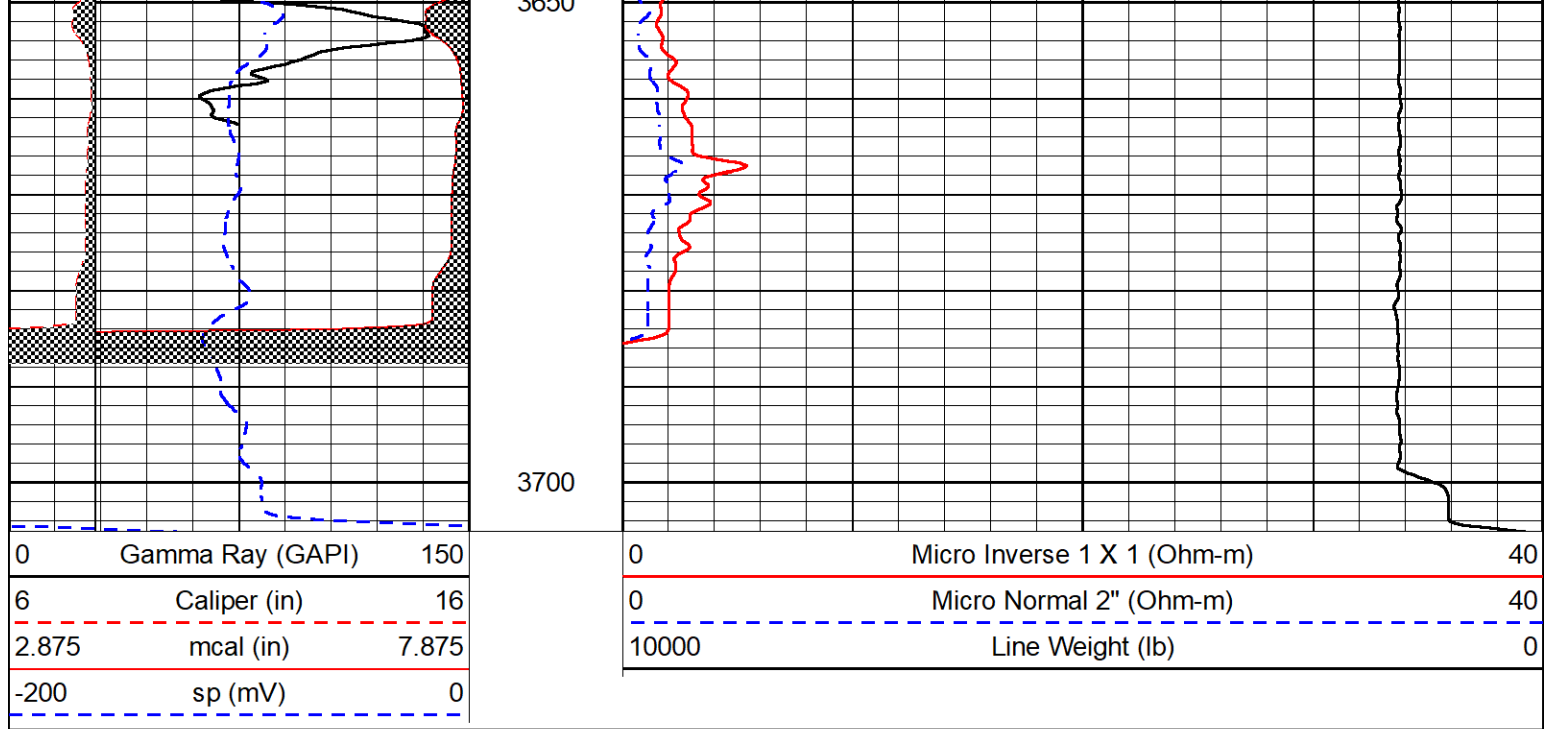
3500

3550

3600

3650





Calibration Report

Database File: bowman_hilger 1.db
 Dataset Pathname: stkml/pass3.12
 Dataset Creation: Sun Sep 11 04:51:03 2022

Dual Induction Calibration Report

Serial-Model: 501 HT-M&W
 Surface Cal Performed: Sat Aug 27 21:37:29 2022

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		m	b
Deep	83.639	487.104	0.000	183.000	mmho/m	0.455	-41.000
Medium	113.335	1585.690	0.000	442.000	mmho/m	0.305	-35.000

Microlog Calibration Report

Serial-Model: 402-PSIML
 Performed: Fri Sep 9 11:18:26 2022

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	12000.0000	-1.5000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	14000.0000	-1.2000
Caliper	1.0052	1.0858	5.0000	16.5000	in	80.0000	-74.7000

Compensated Density Calibration Report

Serial-Model: 307-11-M&W
 Source #: 20762B
 Master Calibration Performed: Sat Aug 27 10:20:16 2022

Master Calibration

Density Far Detector Near Detector

	Density			Far Detector	Near Detector	
Magnesium	1.755	g/cc		3600.52	4768.22	cps
Aluminum	2.670	g/cc		693.98	3106.20	cps
Spine Angle = 75.41			Density/Spine Ratio = 0.538			
	Size			Reading		
Small Ring	6.00	in		1.16		
Large Ring	18.00	in		1.01		

Compensated Neutron Calibration Report
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Serial Number:	207-MW
Tool Model:	M&W

CALIBRATION					
	Detector	Readings		Target	Normalization
	Short Space	6240.00	cps	1000.00	1.6025
	Long Space	460.00	cps	1000.00	1.9500

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:	106	
Tool Model:	M&W	
Performed:	Fri Dec 3 15:10:46 2021	
Calibrator Value:	500.0	GAPI
Background Reading:	24.0	cps
Calibrator Reading:	637.0	cps
Sensitivity:	0.5500	GAPI/cps



MIDWEST WIRELINE

Field	Baumgarten
County	Rooks
State	Kansas