



MICRORESISTIVITY LOG

PIONEER
Pioneer Energy Services

Company CASTLE RESOURCES, INC.
Well STEINSHOUER #3
Field HOXIE WEST
County SHERIDAN
State KANSAS

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Location: API #: 15-179-21437-00-00

Other Services

SE NE
1980' FNL & 660' FEL
SEC 34 TWP 8S RGE 29W

CNL/CDL
DIL

Permanent Datum GROUND LEVEL Elevation 2817'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2823'
D.F. N/A
G.L. 2817'

Date 9/30/2017

Run Number ONE

Depth Driller 4525'

Depth Logger 4523'

Bottom Logged Interval 4522'

Top Log Interval 3400'

Casing Driller 8.625" @ 276'

Casing Logger 275'

Bit Size 7.875"

Type Fluid in Hole CHEMICAL

Salinity, ppm CL 4000

Density / Viscosity 9.6 60

pH / Fluid Loss 9.0 12.8

Source of Sample FLOWLINE

Rim @ Meas. Temp 0.6 @ 77

Rimf @ Meas. Temp 0.45 @ 77

Rmc @ Meas. Temp 0.81 @ 77

Source of Rimf / Rmc CHARTS

Rim @ BHT 0.38 @ 121

Operating Rig Time 3 HOURS

Max Rec. Temp. F 121 DEG F

Equipment Number 108

Location HAYS

Recorded By T. MARTIN

Witnessed By JERRY GREEN

<<< Fold Here >>>

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

HOXIE, KS, 2 S TO 30S, 5 W, 1/4 S, W INTO

Log Measured From: KELLY BUSHING

Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES

www.pioneerenergy.com

785-625-3858

Your Pioneer Energy Services Crew

This Log Record Was Witnessed By

Engineer: T. MARTIN

Operator:

Operator:

Operator:

Primary Witness: JERRY GREEN

Secondary Witness:

Secondary Witness:

Secondary Witness:

Log Variables

Database C:\ProgramData\Warrior\Data\castle_steinshouer_#3.db
Dataset field/well/stkml/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	121	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	-160	60	Off	4523

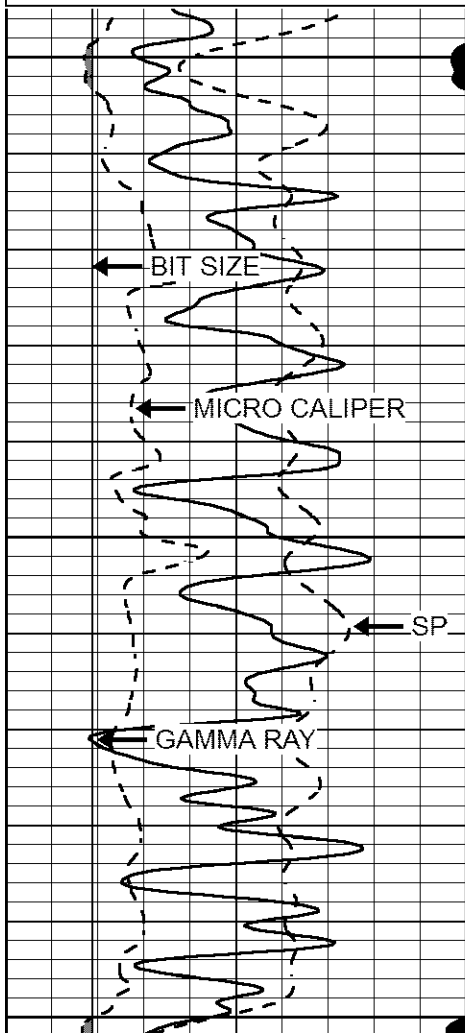


MAIN PASS

Database File castle_steinshouer_#3.db
Dataset Pathname stkml/pass3.1
Presentation Format micro
Dataset Creation Sun Oct 01 01:50:00 2017
Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

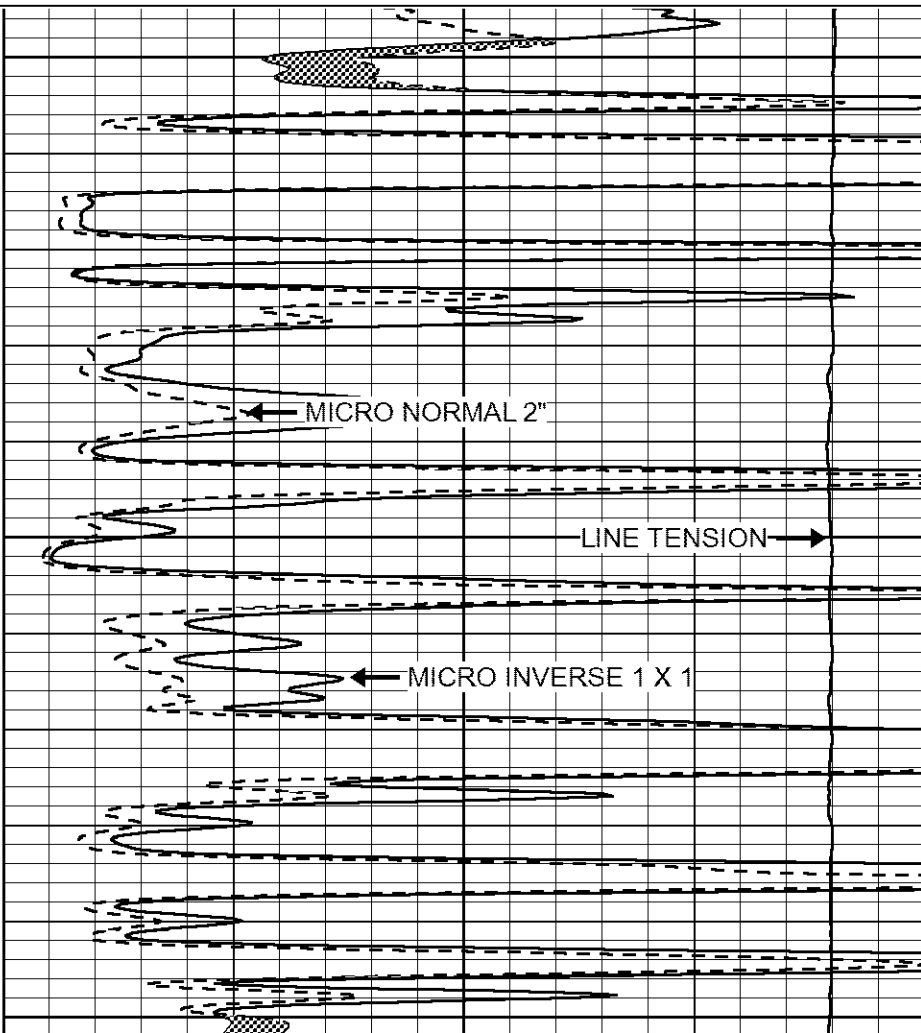
0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0

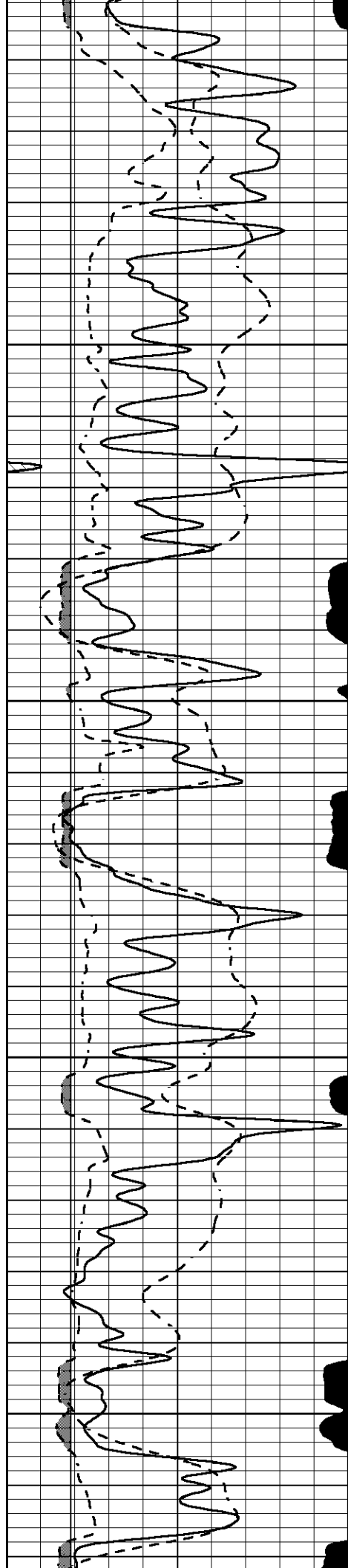


3400

3450

3500



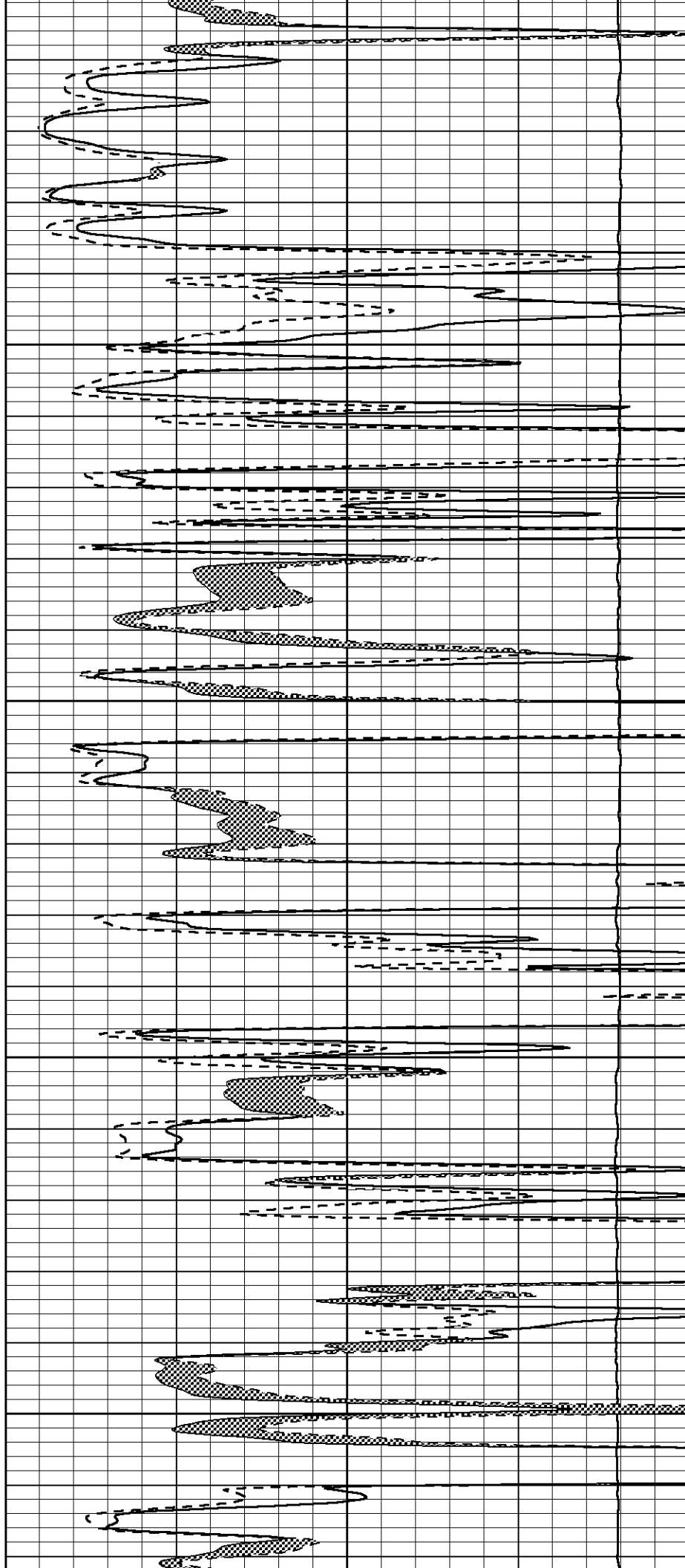


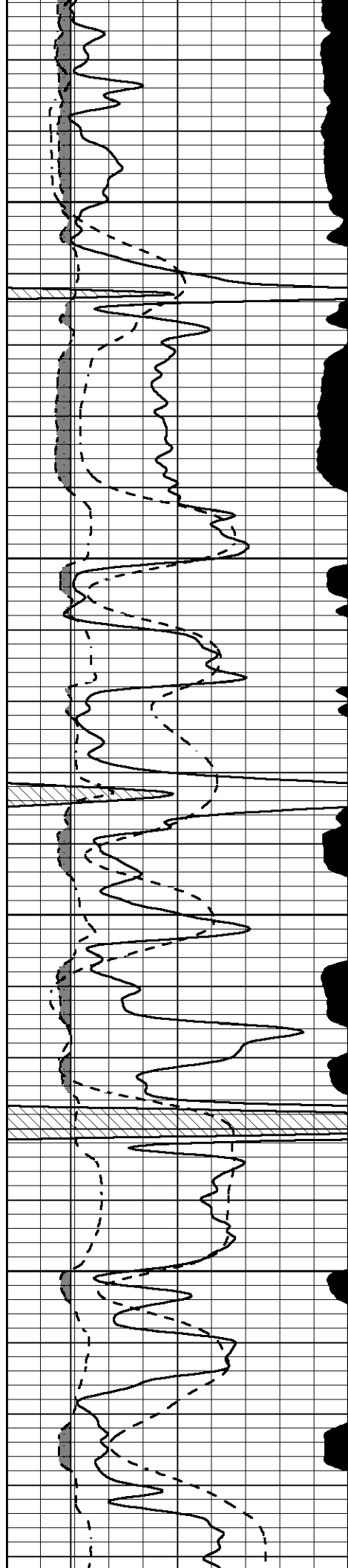
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3600

3650

3700



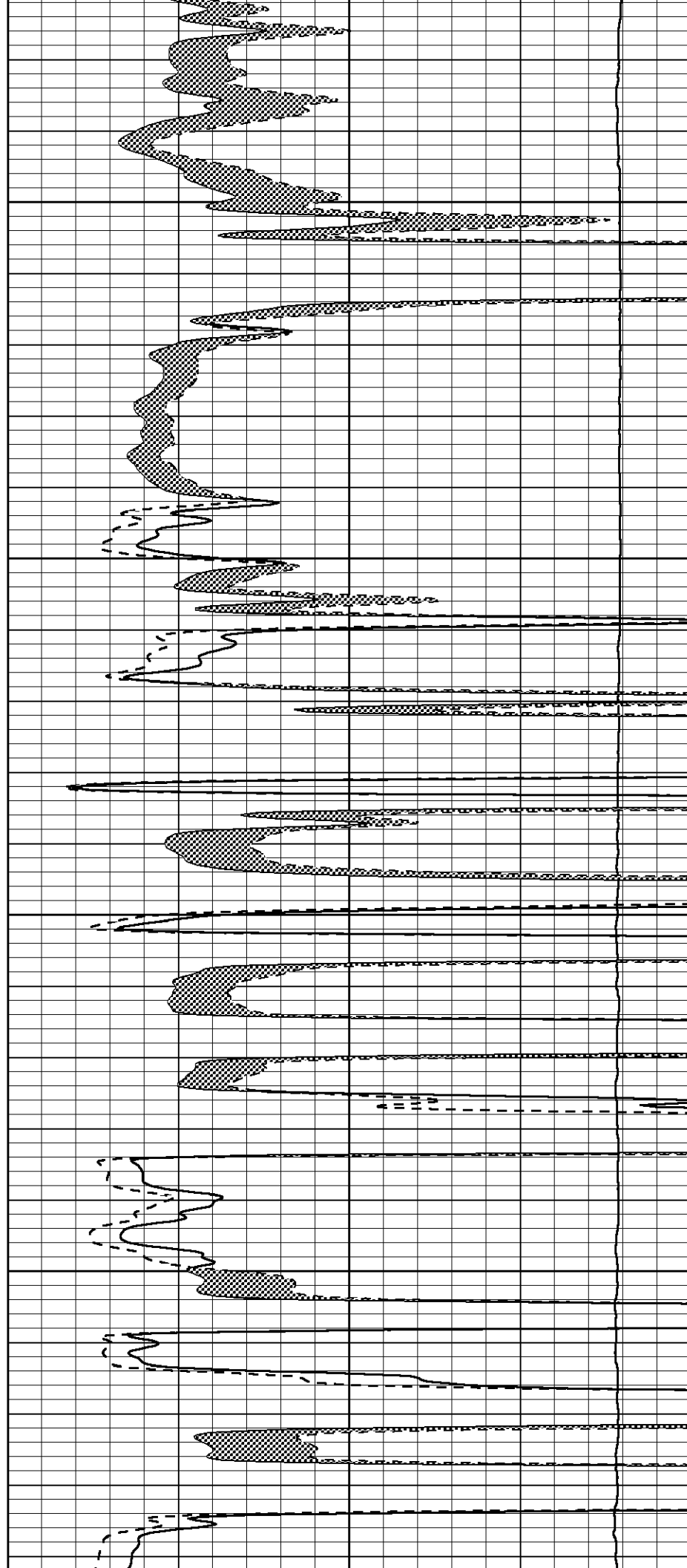


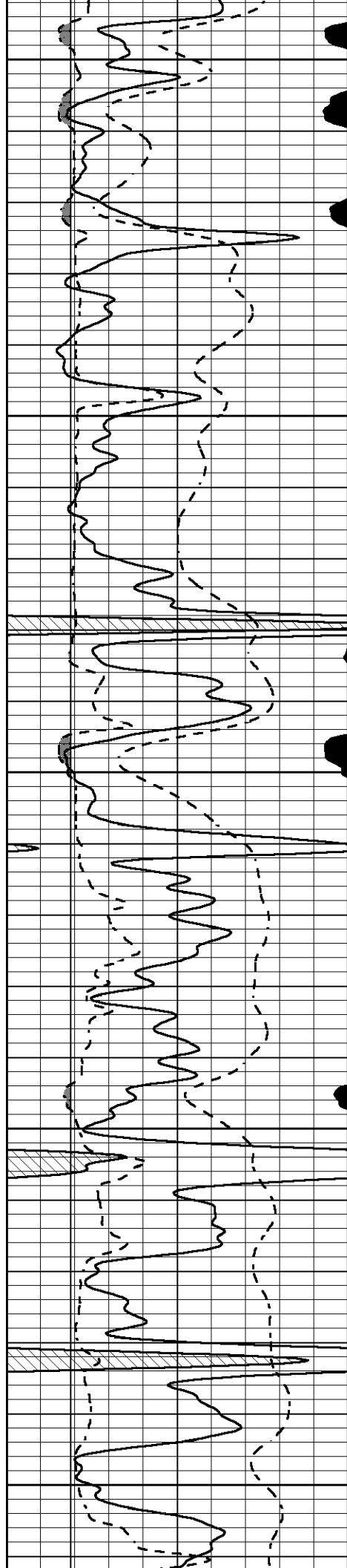
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3800

3850

3900





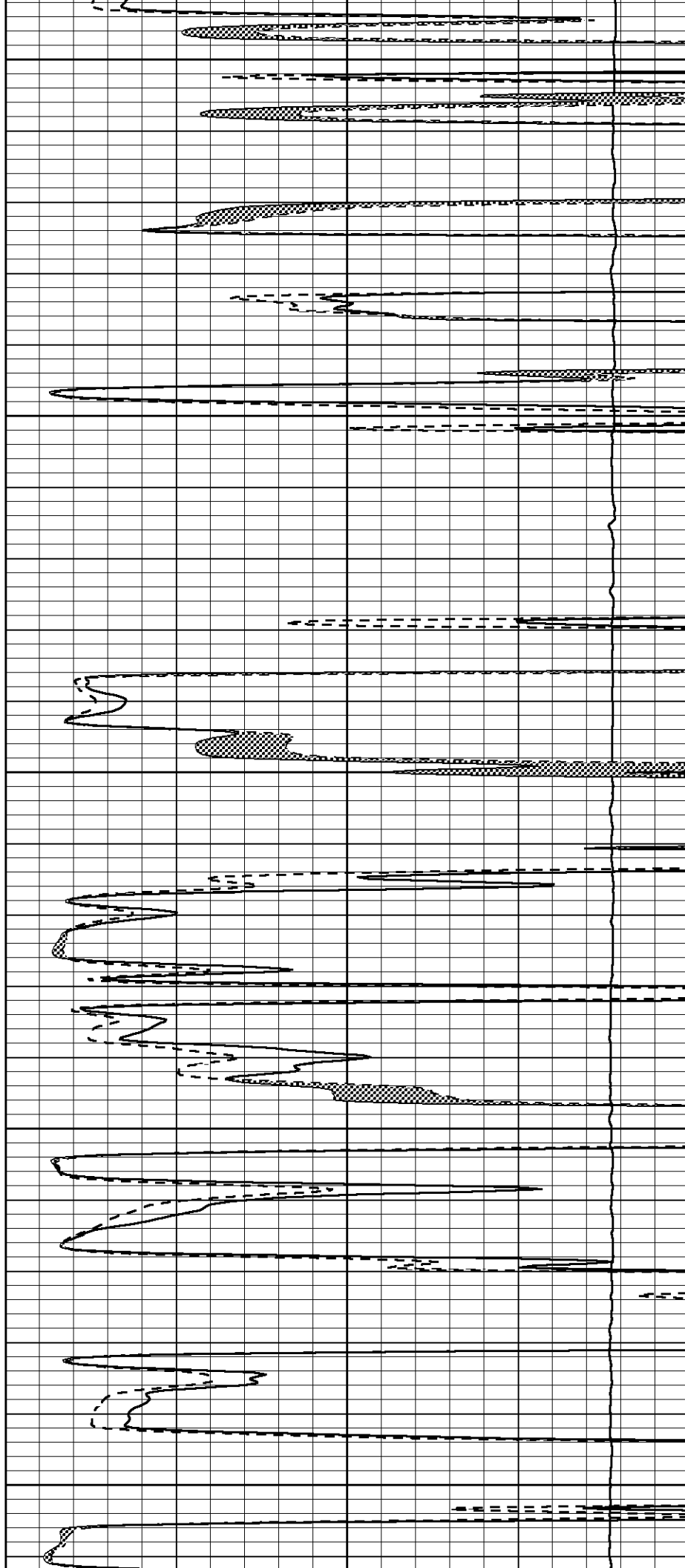
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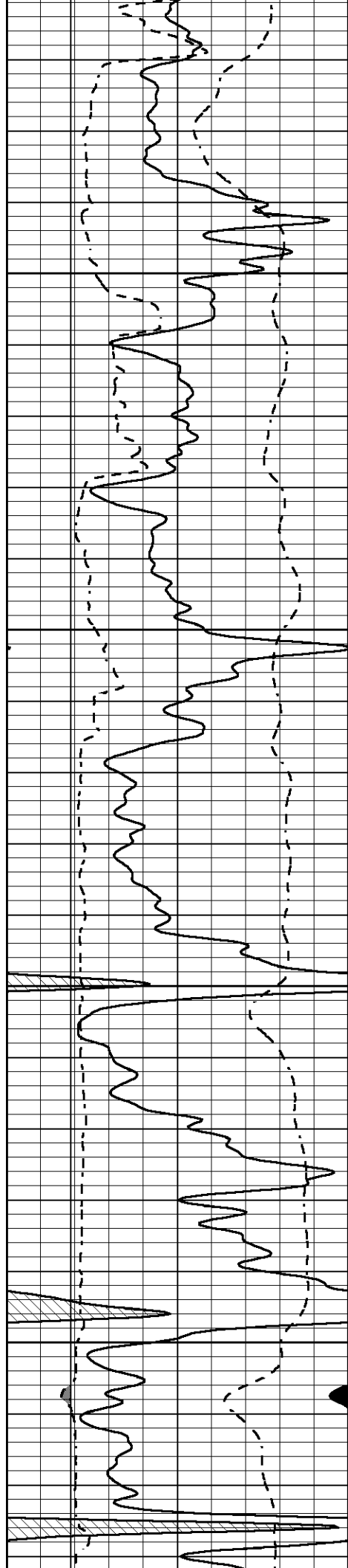
4000

4050

4100

4150



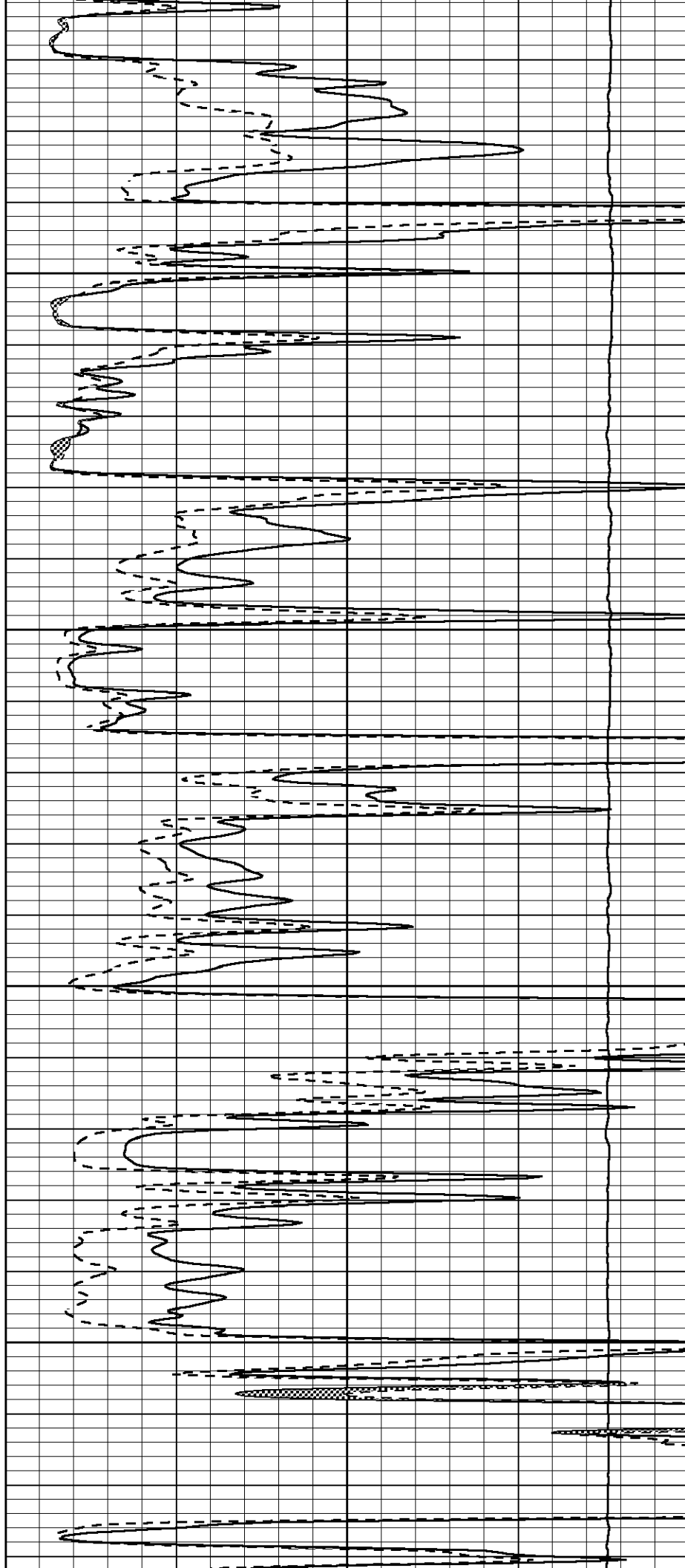


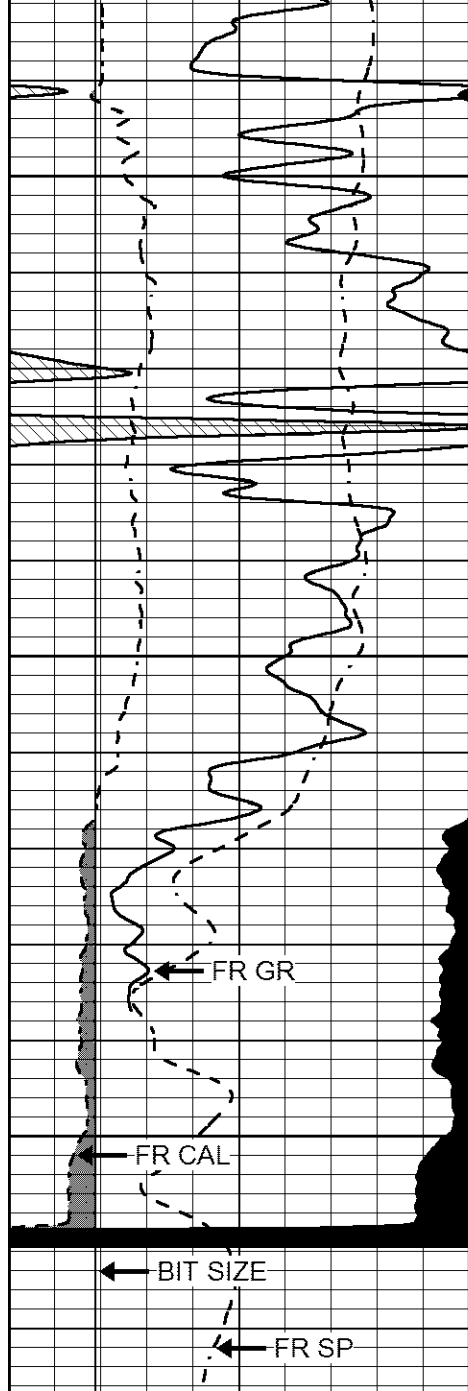
4200

4250

4300

4350



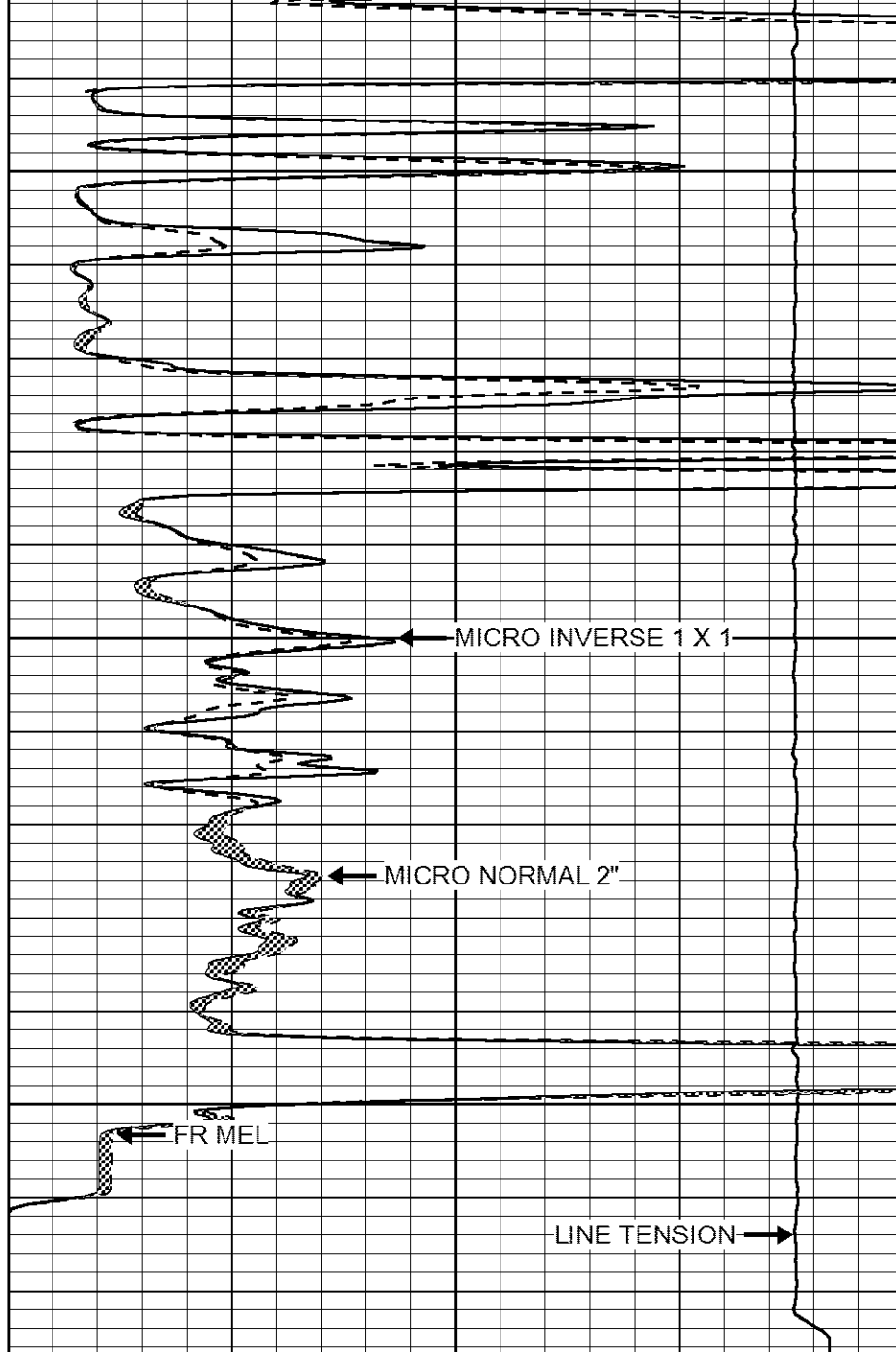


0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

4400

4450

4500



0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0



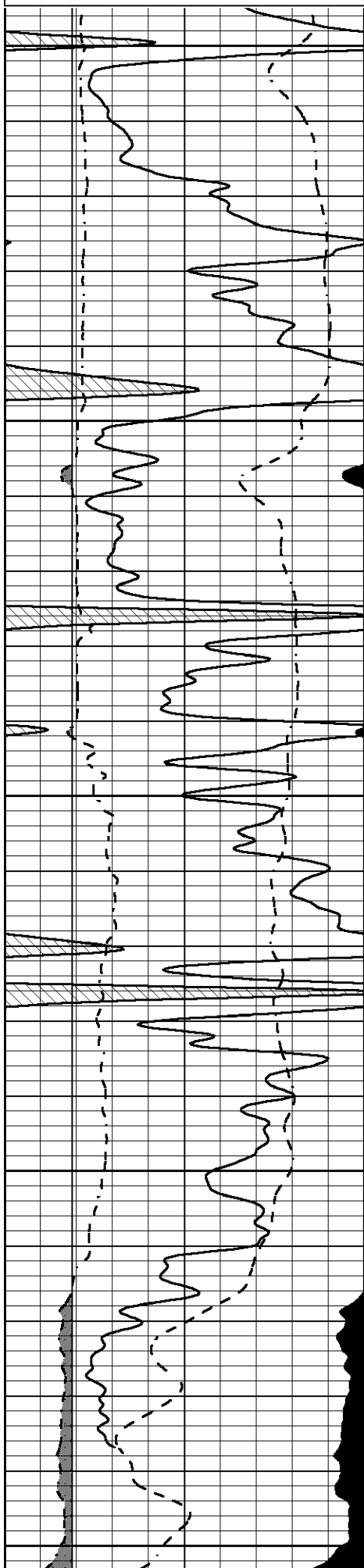
REPEAT SECTION

Database File castle_steinshouer_#3.db
 Dataset Pathname stkml/pass2.1
 Presentation Format micro
 Dataset Creation Sun Oct 01 01:25:56 2017
 Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16

0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40

6 BIT SIZE (in) 16
-200 SP (mV) 0



4300

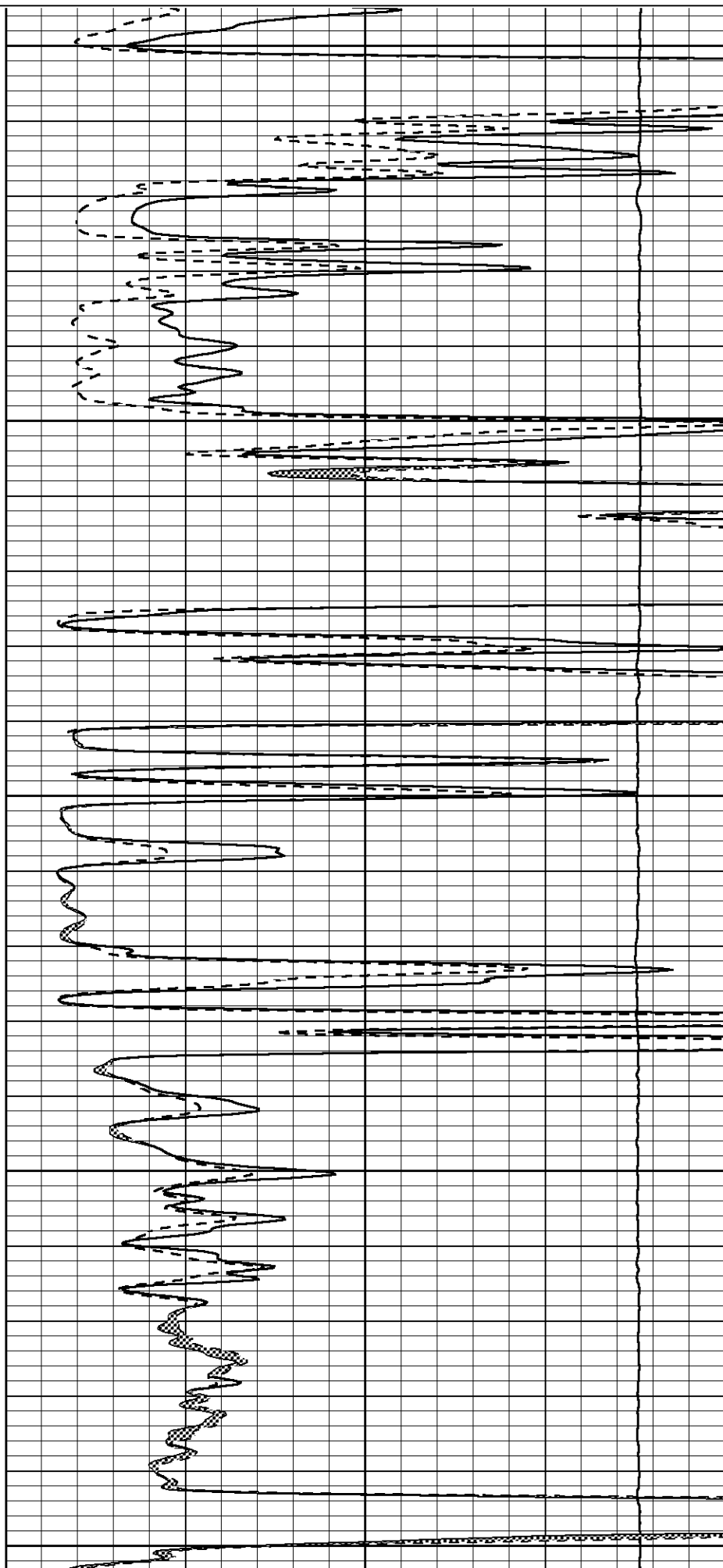
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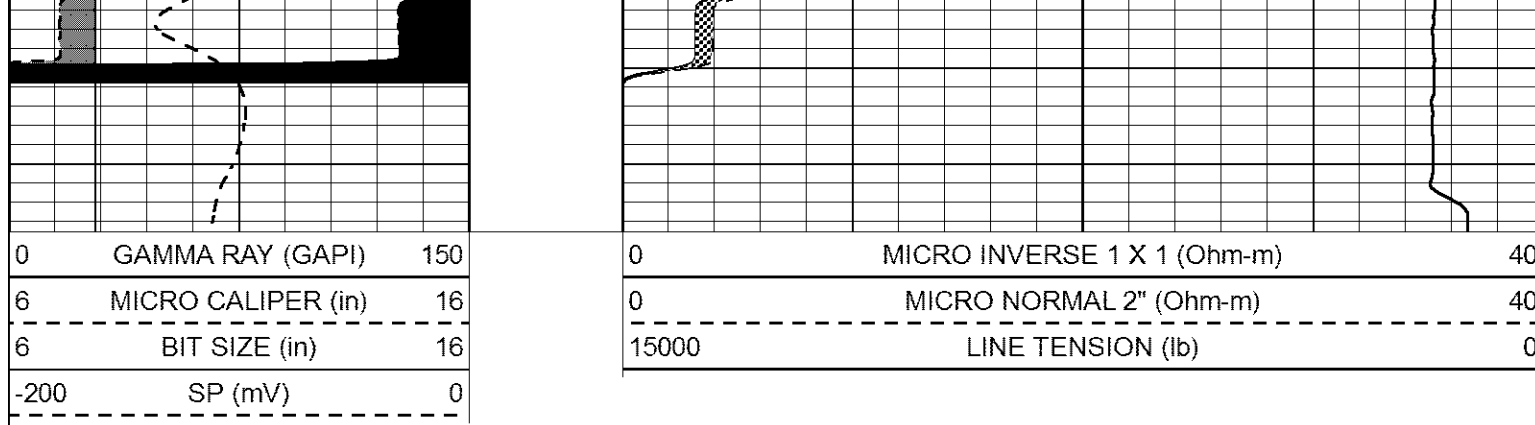
4400

4450

4500

15000 LINE TENSION (lb) 0





Calibration Report	
Database File	castle_steinshouer_#3.db
Dataset Pathname	stkml/pass3.1
Dataset Creation	Sun Oct 01 01:50:00 2017

Dual Induction Calibration Report

Serial-Model:	1987-M&W
Calibration Performed:	Tue Apr 11 16:07:38 2017

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.530	-38.000
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-110.500

Microlog Calibration Report

Serial-Model:	PSI-02-PSI STKBL ML
Performed:	Fri Jun 23 00:25:19 2017

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	16000.0000	0.0000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	18000.0000	0.0000
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-131.5000

Compensated Density Calibration Report

Serial-Model:	168-986-M&W
Source / Verifier:	/
Master Calibration Performed:	Tue Apr 11 16:07:47 2017

Master Calibration					
	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.675	g/cc	859.57	3020.22	cps
Spine Angle = 74.61			Density/Spine Ratio = 0.523		
	Size		Reading		

Small Ring	4.00	in	1.03
Large Ring	14.00	in	1.23

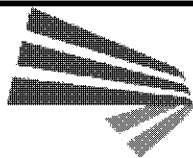
Compensated Neutron Calibration Report

Serial Number:	tk10-MW
Tool Model:	M&W
Calibration Performed:	Wed Nov 16 11:21:36 2016

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

Gamma Ray Calibration Report

Serial Number:	89-M&W
Tool Model:	M&W
Calibration Performed:	Tue Apr 11 16:08:01 2017
Calibrator Value:	1000.0 GAPI
Background Reading:	0.0 cps
Calibrator Reading:	6.2 cps
Sensitivity:	0.5200 GAPI/cps



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