



# MICRORESISTIVITY LOG

Company AMERICAN WARRIOR, INC.  
 Well WEBER NO. 2-7  
 Field WILDCAT  
 County ELLIS  
 State KANSAS

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Location: API #: 15-051-26855-00-00  
 1,425' FNL & 335' FWL  
 SEC 7 TWP 13S RGE 19W  
 Permanent Datum GROUND LEVEL Elevation 2144'  
 Log Measured From KELLY BUSHING  
 Drilling Measured From KELLY BUSHING  
 Other Services CNL/CDL DIL  
 Elevation K.B. 2152'  
 D.F. N/A  
 G.L. 2144'

Date	12/18/2016
Run Number	ONE
Depth Driller	3910'
Depth Logger	3910'
Bottom Logged Interval	3909'
Top Log Interval	3100'
Casing Driller	8.625" @ 230'
Casing Logger	226'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	1500
Density / Viscosity	8.8 51
pH / Fluid Loss	11.0 6.8
Source of Sample	FLOWLINE
Rm @ Meas. Temp	1.00 @ 38
Rmt @ Meas. Temp	.75 @ 38
Rmc @ Meas. Temp	1.35 @ 38
Source of Rmf / Rmc	CHARTS
Rm @ BHT	.33 @ 115
Operating Rig Time	2 1/2 HOURS
Max Rec. Temp. F	115 DEG F.
Equipment Number	108
Location	COLBY
Recorded By	J. LONG
Witnessed By	JASON T. ALM

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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.  
 ELLIS, NORTH TO EMMERAM ROAD, 4 EAST TO 160TH AVENUE, 1 1/4 SOUTH,  
 EAST INTO (JUST NORTH OF INTERSTATE)

Log Measured From: KELLY BUSHING 8 Ft. Above Permanent Datum

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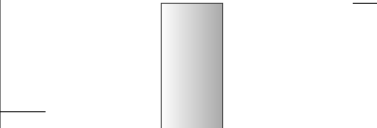
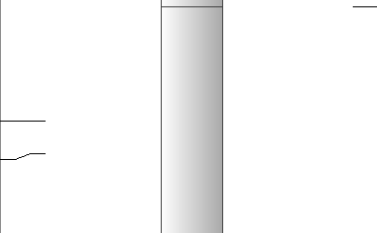
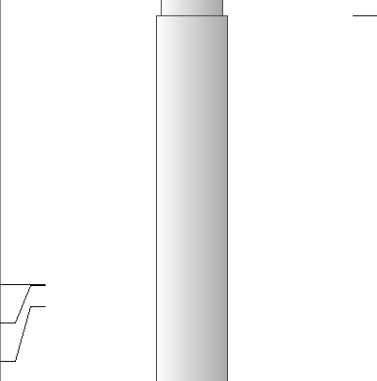
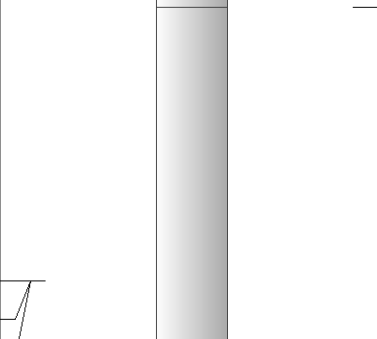
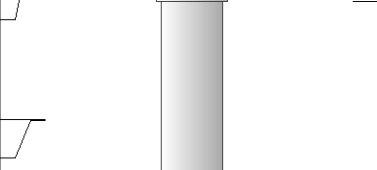
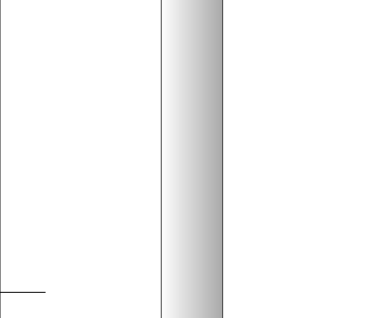
Your Pioneer Energy Services Crew	This Log Record Was Witnessed By
Engineer: J. LONG	Primary Witness: JASON T. ALM
Operator: C. PFEIFER	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\americanwarrior\_weber\_2-7.db  
Dataset field/well/stackmel/pass4.1/\_vars\_

## Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	115	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	-150	-7	Off	3910

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (tk10-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (71-914)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSI STKBL ML (PSI-01) Stackable Microlog Tools	7.58	4.00	65.00
RLL3 RLL3F	15.80 15.79					
CILD	8.00		DIL-M&W (1987)	18.50	3.50	220.00

CILM 4.70

SP 0.20

Dataset: americanwarrior\_weber\_2-7.db: field/well/stackmel/pass1  
 Total length: 43.08 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in

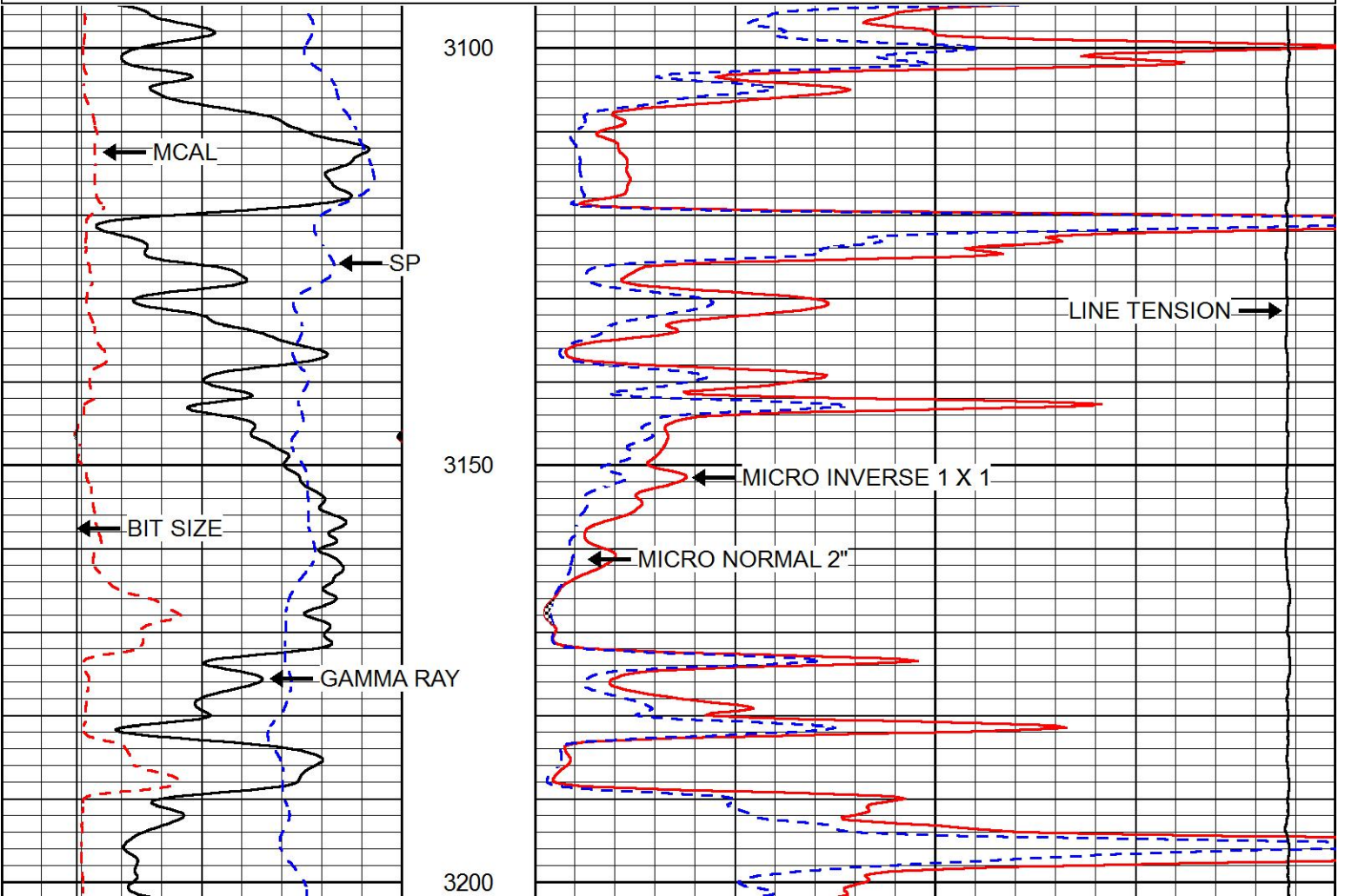


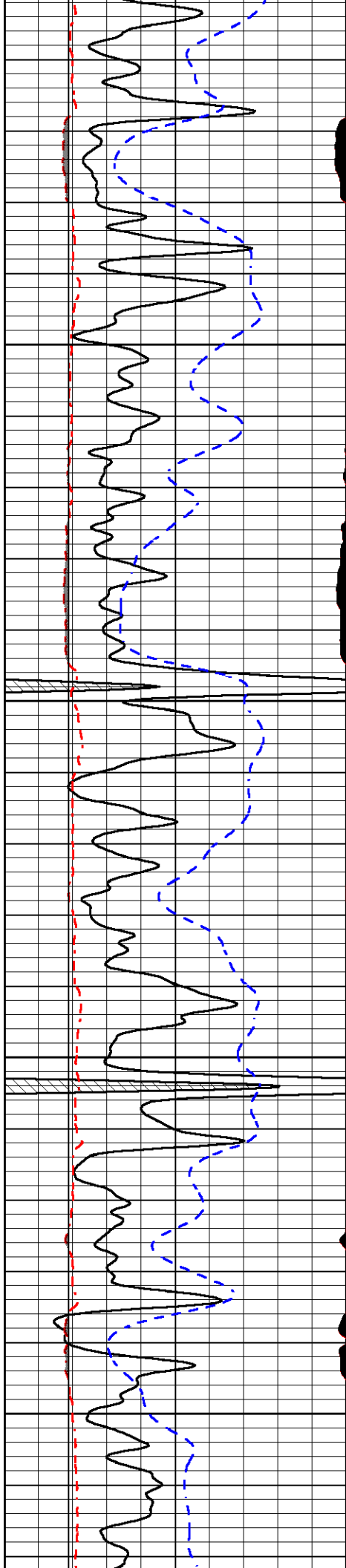
# MAIN PASS

Database File: americanwarrior\_weber\_2-7.db  
 Dataset Pathname: stackmel/pass4.1  
 Presentation Format: micro  
 Dataset Creation: Sun Dec 18 10:47:09 2016  
 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



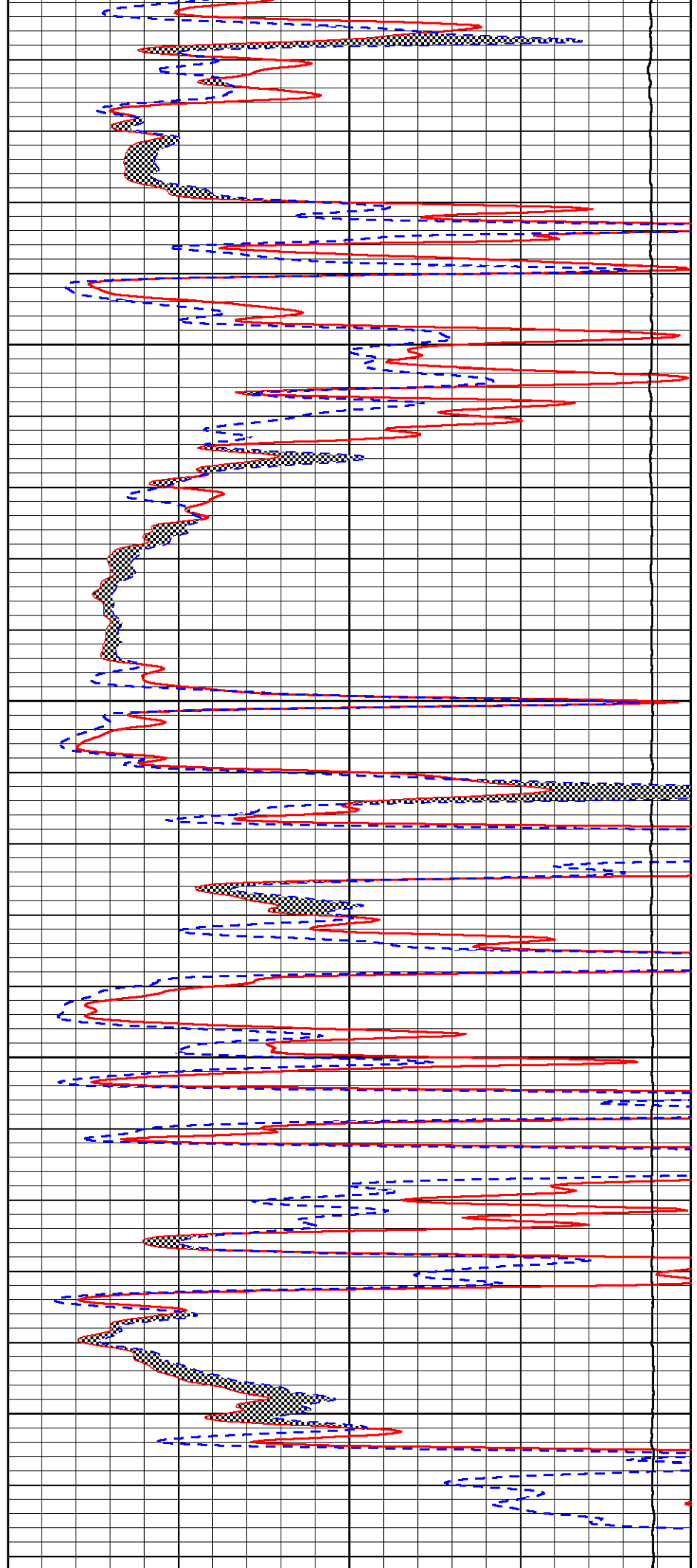


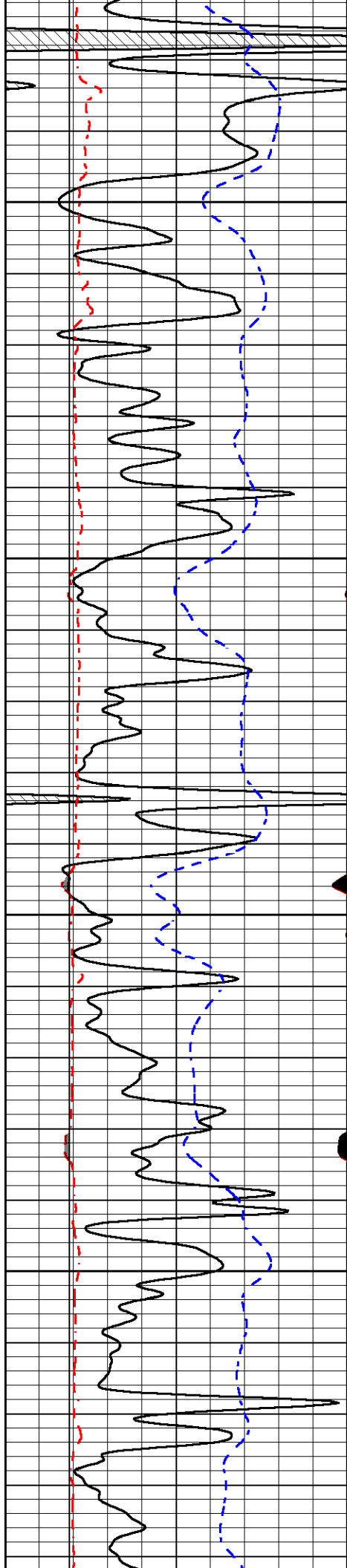
3250

3300

3350

3400



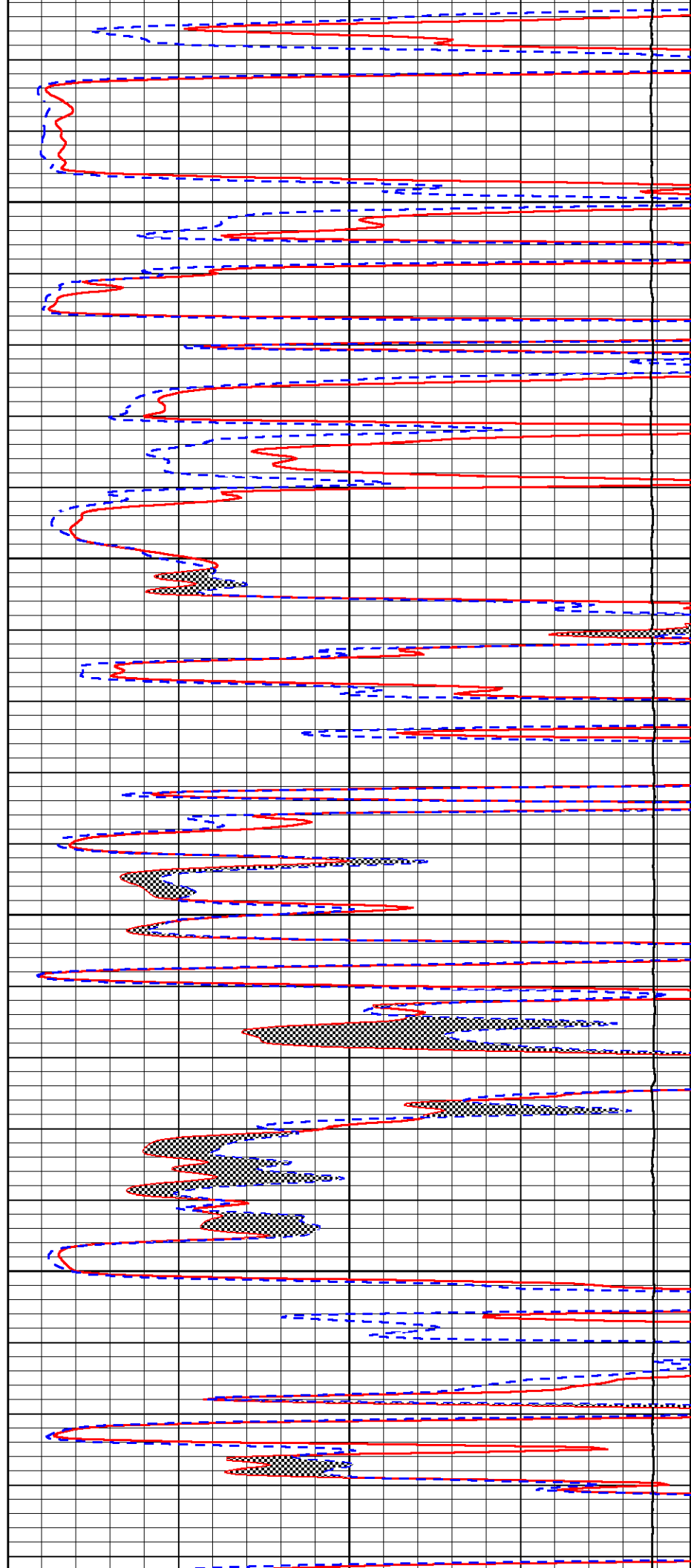


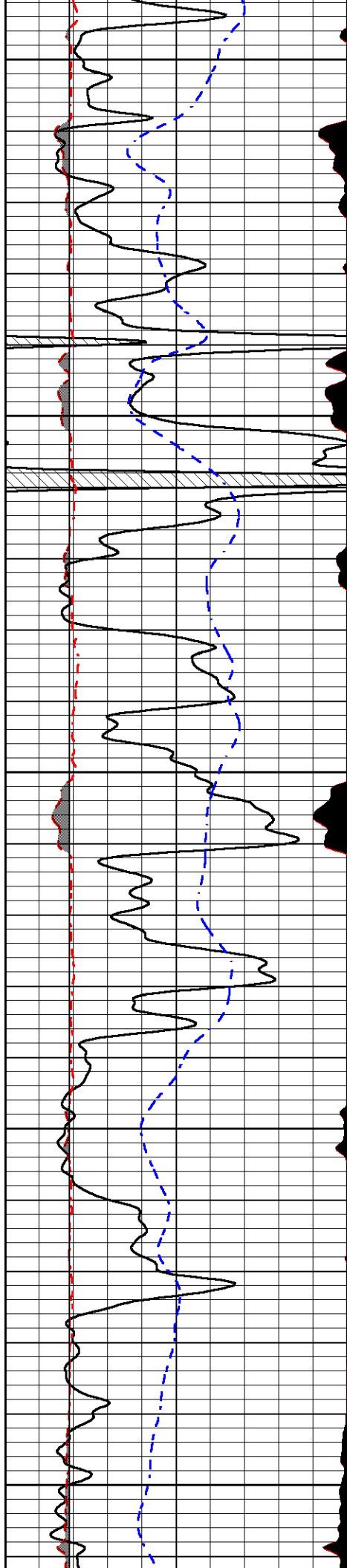
3450

3500

3550

3600





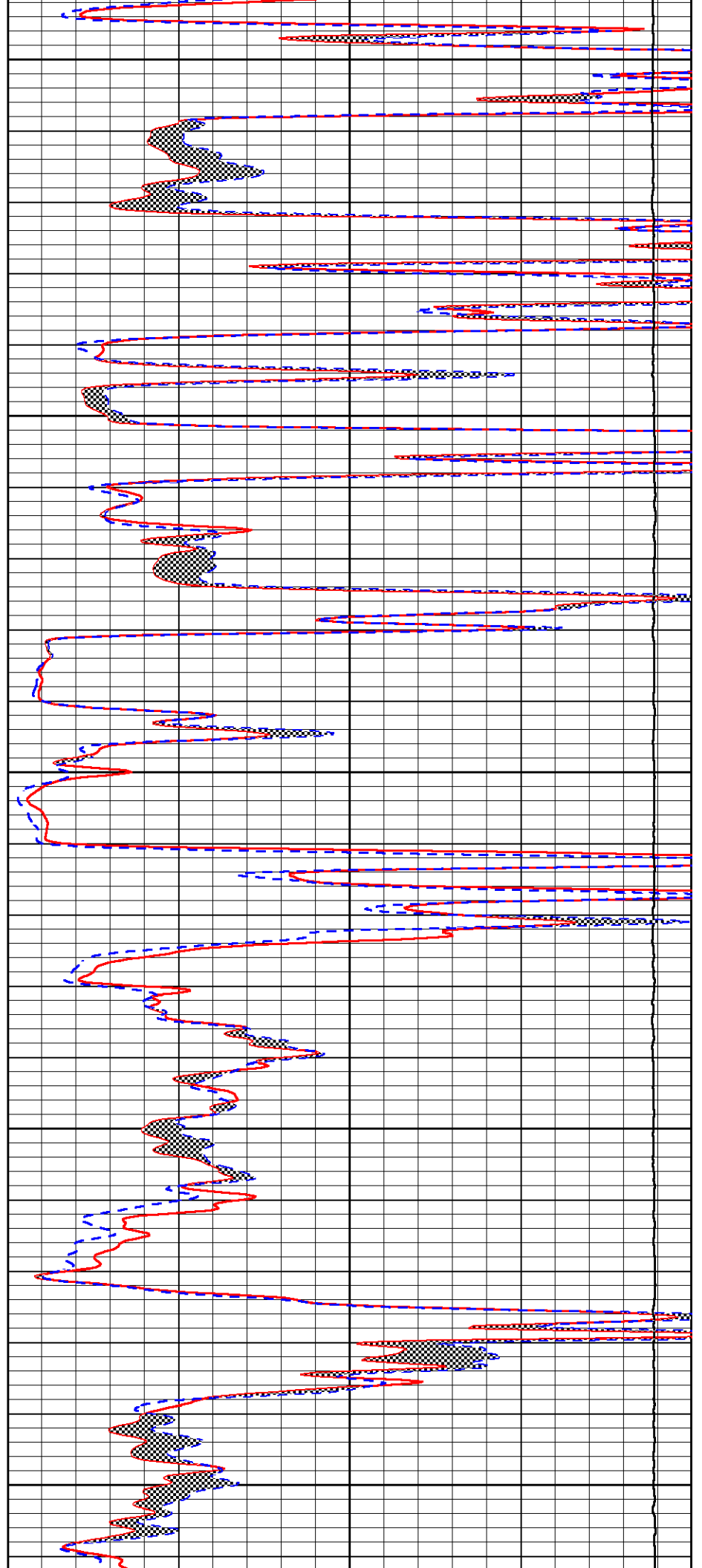
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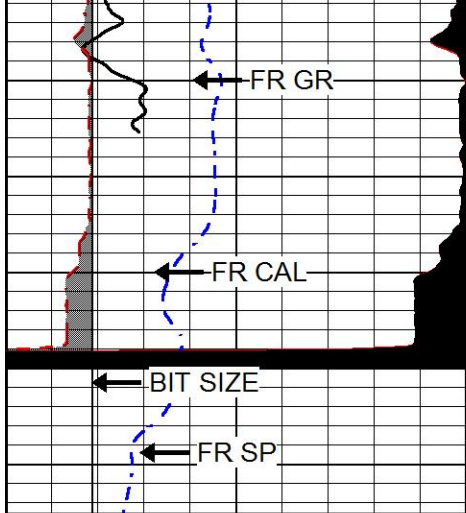
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3750

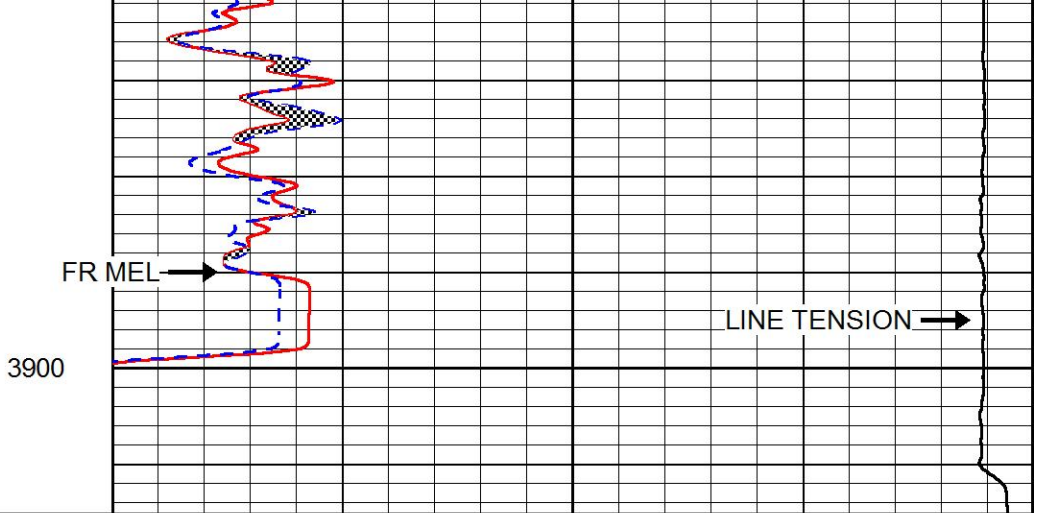
3800

3850





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

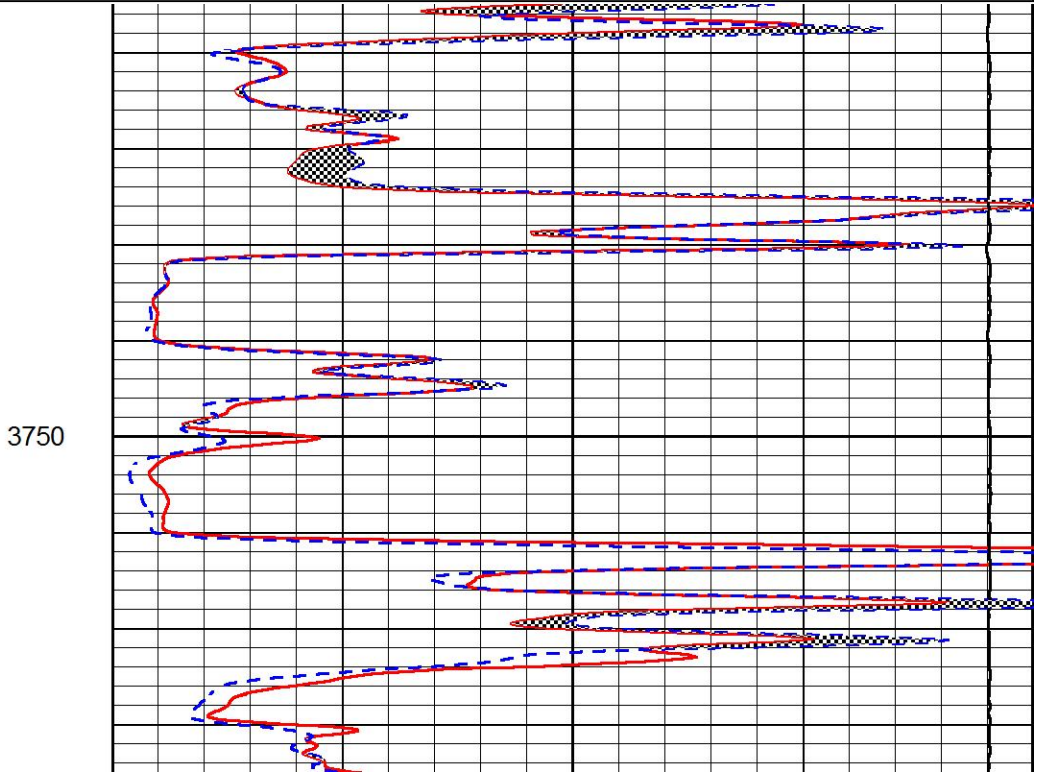
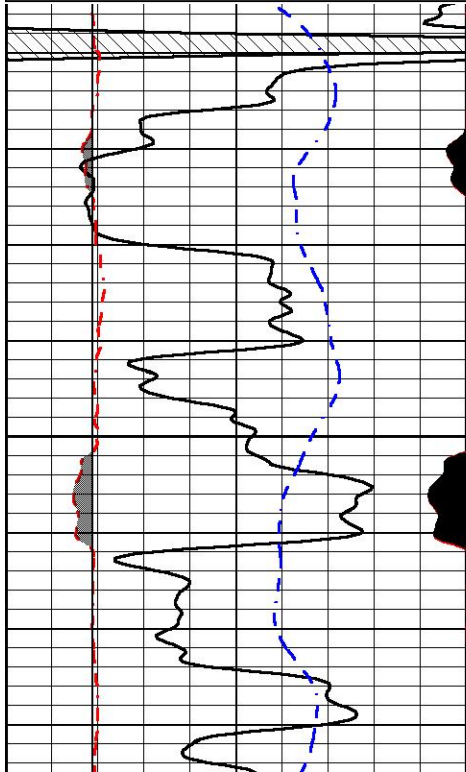


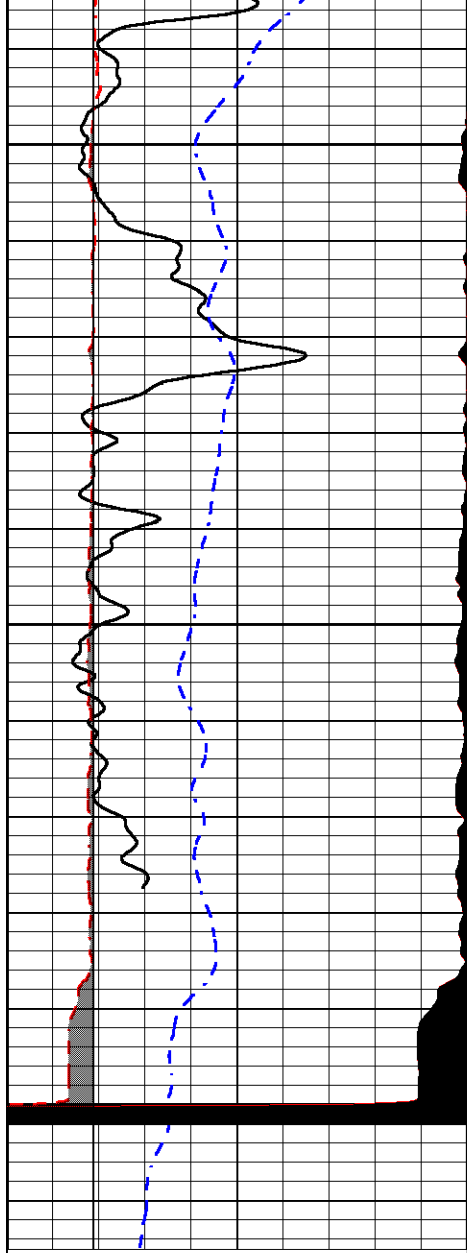
# REPEAT SECTION

Database File	americanwarrior_weber_2-7.db
Dataset Pathname	stackmel/pass3.1
Presentation Format	micro
Dataset Creation	Sun Dec 18 10:51:09 2016
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



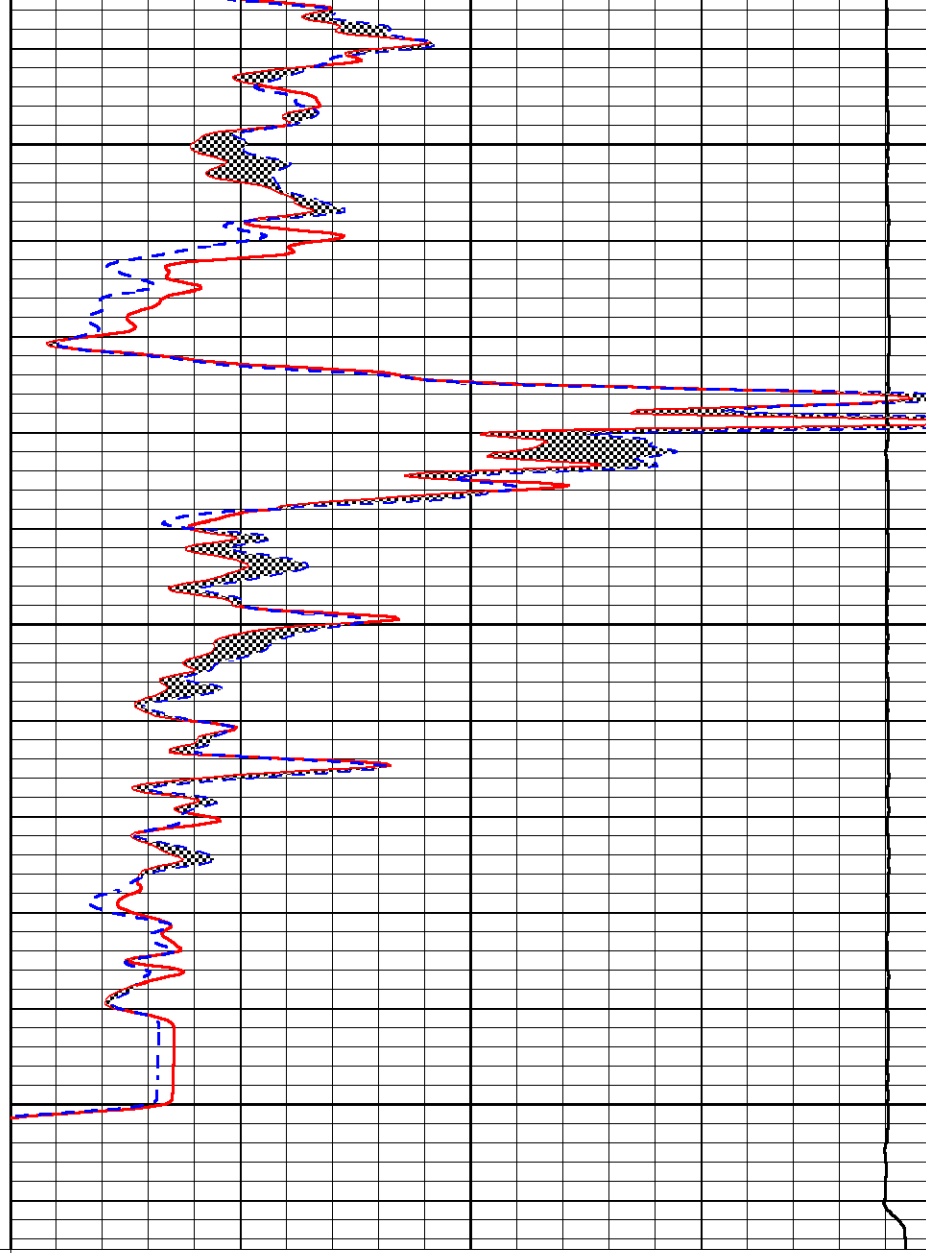


0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

3800

3850

3900



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

### Calibration Report

Database File      americanwarrior\_weber\_2-7.db  
 Dataset Pathname  stackmel/pass1  
 Dataset Creation   Sun Dec 18 08:00:03 2016

### Dual Induction Calibration Report

Serial-Model:                   1987-M&W  
 Calibration Performed:       Thu Nov 17 20:52:56 2016

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.530	-36.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-110.500

**Compensated Density Calibration Report**

Serial-Model: 71-914-M&W  
 Source / Verifier: /  
 Master Calibration Performed: Thu Nov 17 21:42:33 2016

**Master Calibration**

	<u>Density</u>		<u>Far Detector</u>		<u>Near Detector</u>	
Magnesium	1.755	g/cc	4314.49		5307.52	cps
Aluminum	2.675	g/cc	822.19		3456.36	cps
Spine Angle = 75.49			Density/Spine Ratio = 0.537			
	<u>Size</u>		<u>Reading</u>			
Small Ring	4.00	in	1.16			
Large Ring	14.00	in	1.57			

**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: Thu Nov 17 21:13:32 2016

Calibrator Value: 1000.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 6.2 cps

Sensitivity: 0.5200 GAPI/cps



**PIONEER**  
 Pioneer Energy Services

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