



PIONEER
Pioneer Energy Services

MICRORESISTIVITY LOG

Company **K-T OIL EXP & LEASING CO.**
Well **SOUTH OF THE BORDER #1**
Field **LEITNER**
County **RAWLINS**
State **KANSAS**

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Location: API #: 15-153-21185-00-00

1455' FNL & 755' FEL

SEC 6 TWP 1S RGE 31W

Permanent Datum **GROUND LEVEL** Elevation **2951'**
Log Measured From **KELLY BUSHING**
Drilling Measured From **KELLY BUSHING**

Other Services
CNL/CDL
DIL
Elevation
K.B. 2959'
D.F. N/A
G.L. 2951'

Date	4/18/2017		
Run Number	ONE		
Depth Driller	4229'		
Depth Logger	4228'		
Bottom Logged Interval	4227'		
Top Log Interval	3600'		
Casing Driller	8.625" @ 348'		
Casing Logger	346'		
Bit Size	7.875"		
Type Fluid in Hole	CHEMICAL		
Salinity, ppm CL	2000		
Density / Viscosity	9.4 56		
pH / Fluid Loss	9.5 8.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.80 @ 72		
Rmf @ Meas. Temp	0.60 @ 72		
Rmc @ Meas. Temp	1.08 @ 72		
Source of Rmf / Rmc	CHARTS		
Rm @ BHT	0.49 @ 118		
Operating Rig Time	3 HOURS		
Max Rec. Temp. F	118		
Equipment Number	91		
Location	COLBY		
Recorded By	D. SCHMIDT		
Witnessed By	MARC DOWNING		

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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.

HERNDON,
NORTH TO DD RD, 1 WEST, 1/4 NORTH,
1/2 WEST, 1/4 NORTH, WEST TO RD 32, 1/2 NORTH,
WEST AND SOUTH INTO

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

THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneerenergy.com 785-625-3858

Your Pioneer Energy Services Crew

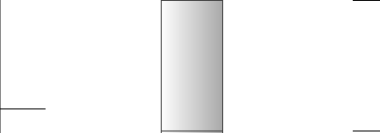
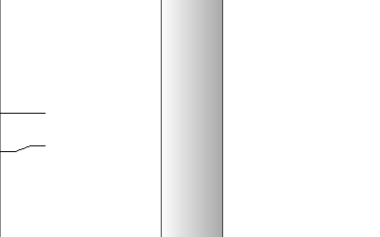
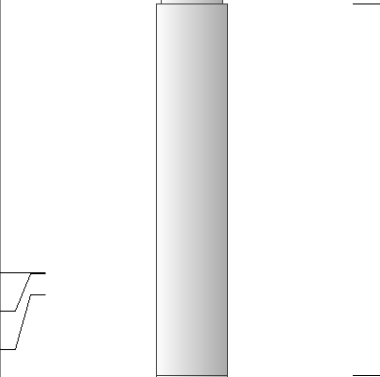
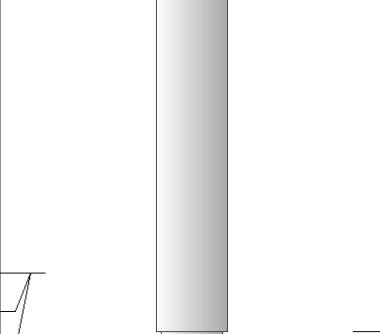
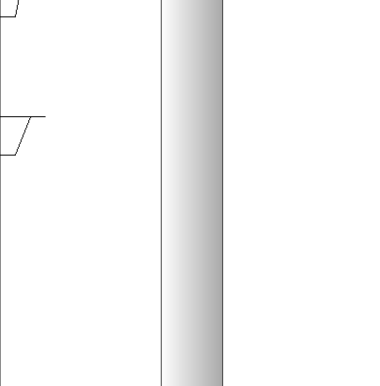
Engineer: D. SCHMIDT
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: MARC DOWNING
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	233	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	70	0	5.5	0	4228	118	7.875

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (207-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (90-1031)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSIML (PSI-01) GO Micro log tools converted to Simplec electronics	7.58	4.00	65.00
RLL3F RLL3	15.80 15.80					

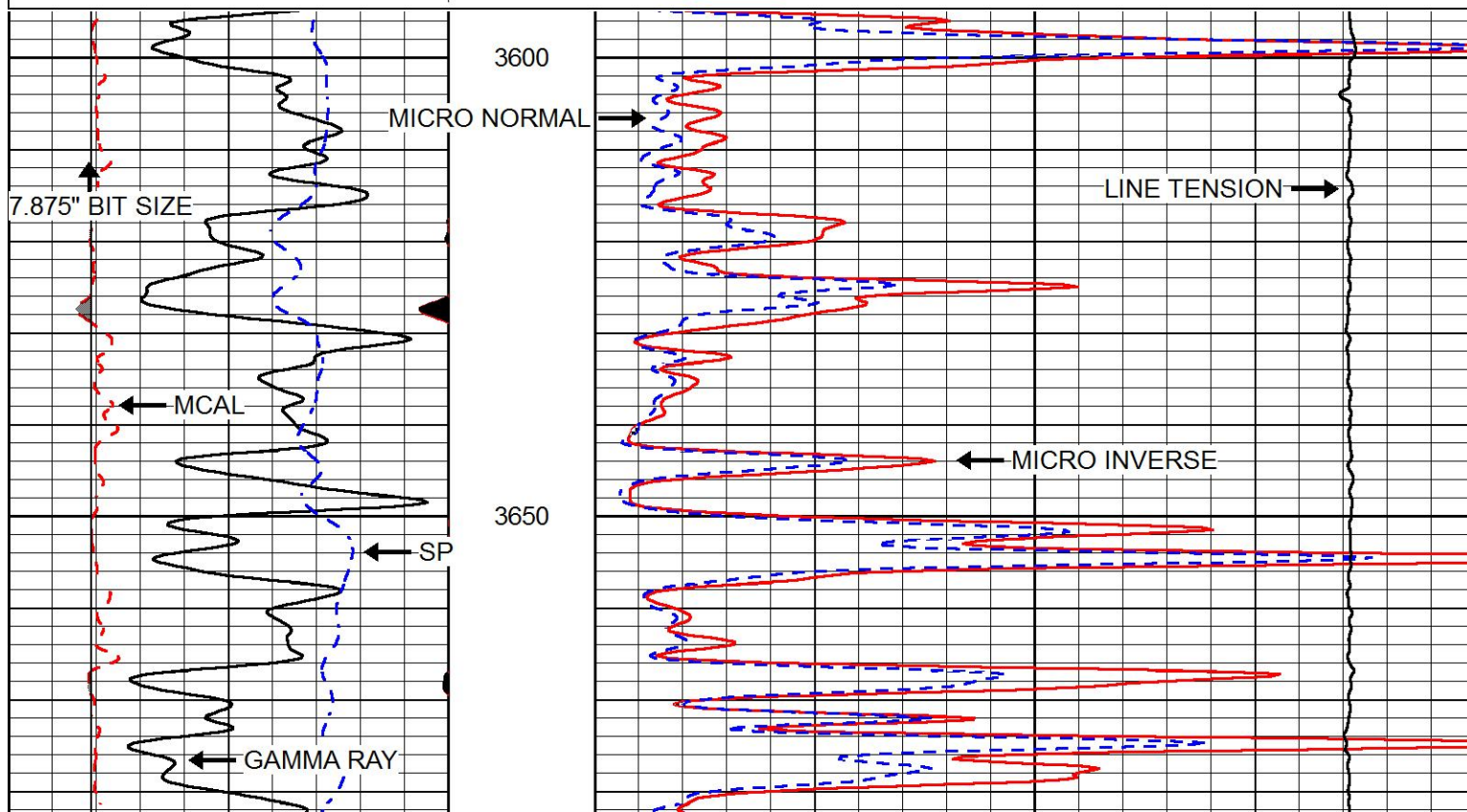
				DIL-M&W (PSI 13)	18.50	3.50	220.00
CILD	8.00						
CILM	4.70						
SP	0.20						
Dataset: k-t_south of border_1.db: field/well/STKML/pass3.5 Total length: 43.08 ft Total weight: 685.00 lb O.D.: 4.00 in							

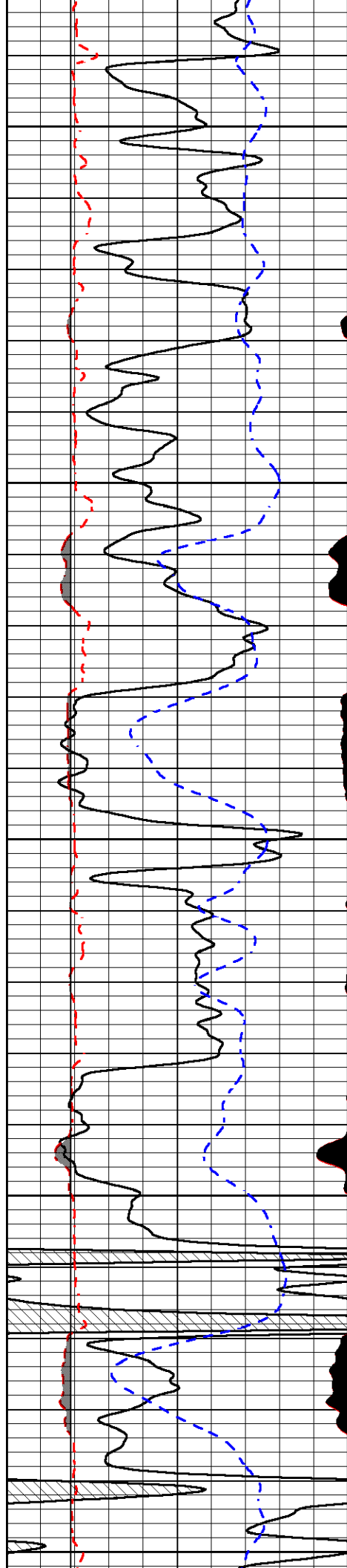


MAIN PASS

Database File	k-t_south of border_1.db
Dataset Pathname	STKML/pass3.5
Presentation Format	micro
Dataset Creation	Tue Apr 18 12:29:09 2017
Charted by	Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150	0	Micro Inverse 1 X 1 (Ohm-m)	40
6	MCAL (in)	16	0	Micro Normal 2" (Ohm-m)	40
2.875	mcals (in)	7.875	10000	Line Weight (lb)	0
6	Bit Size (in)	16			
-200	SP (mV)	0			





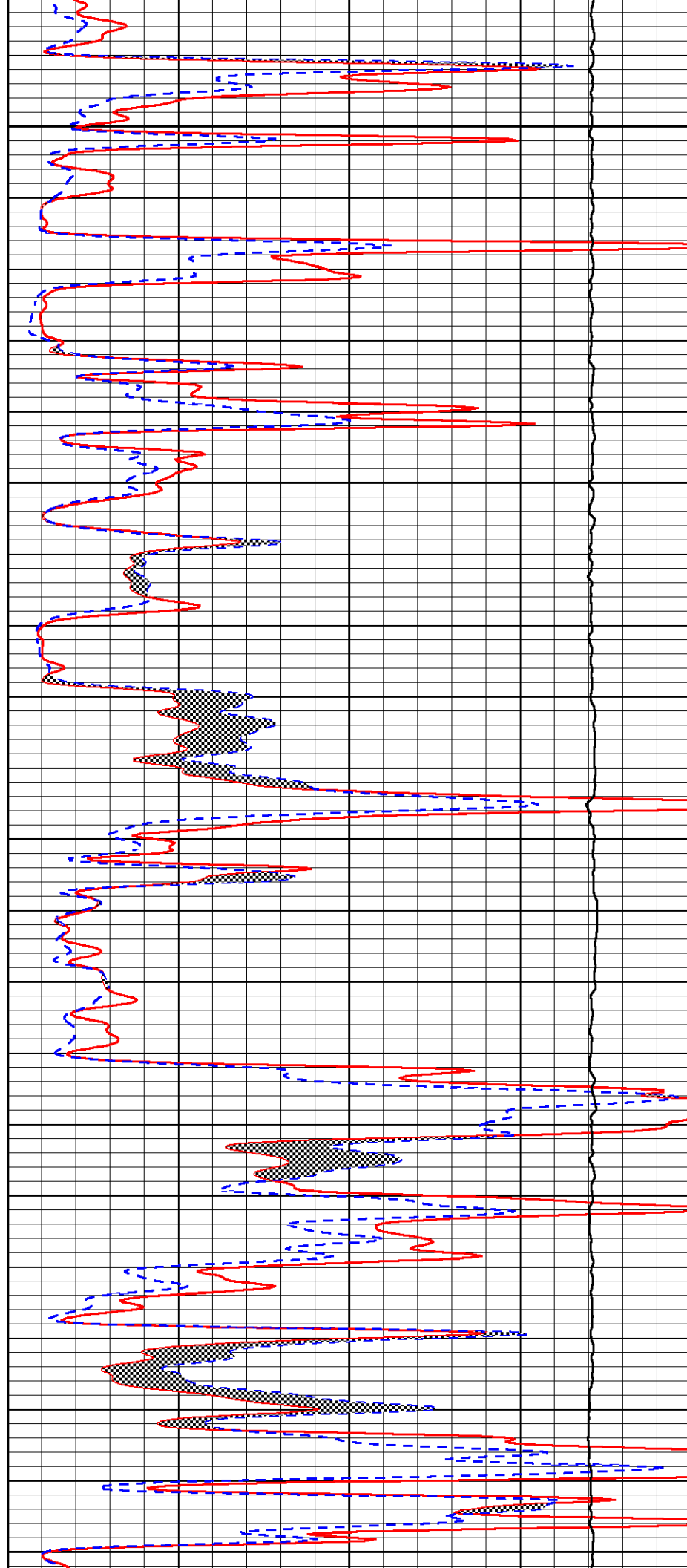
3700

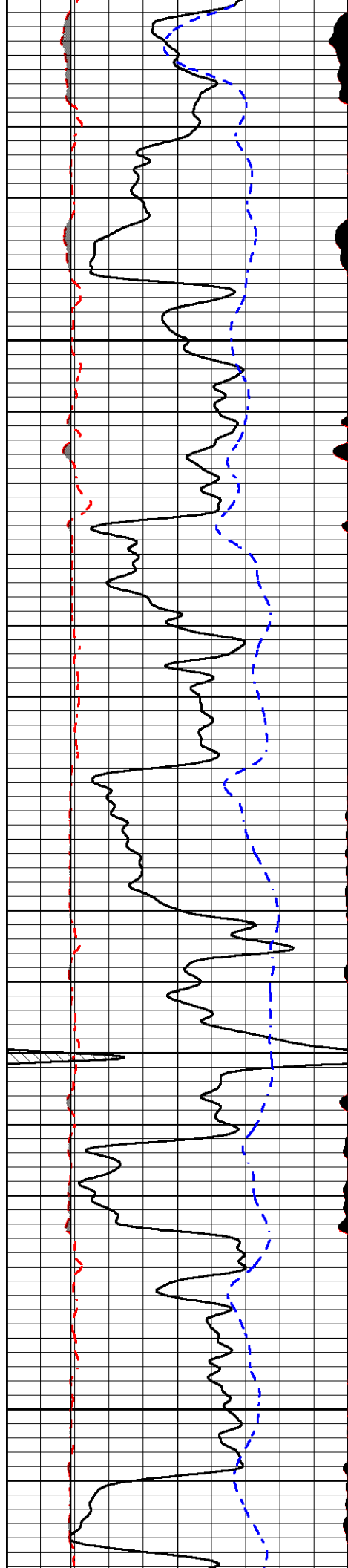
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3800

3850

3900



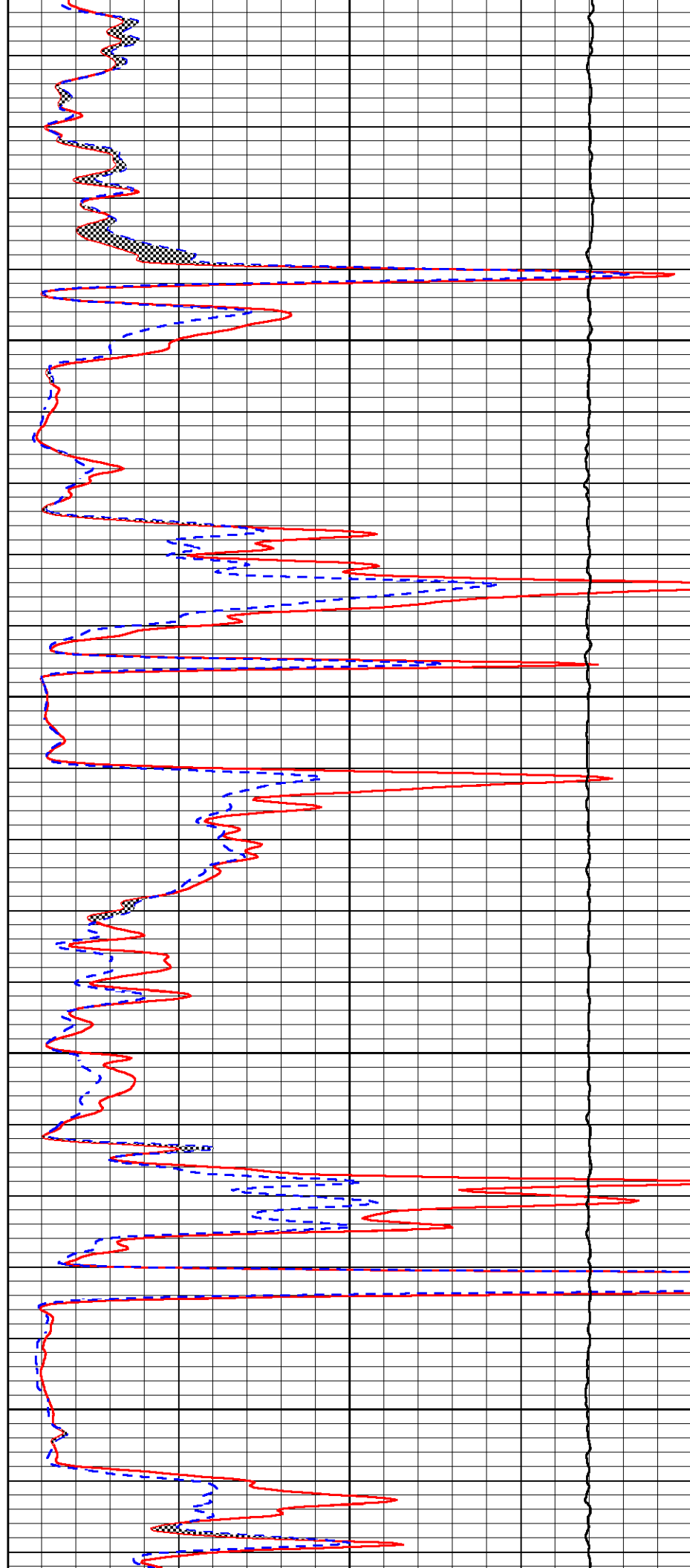


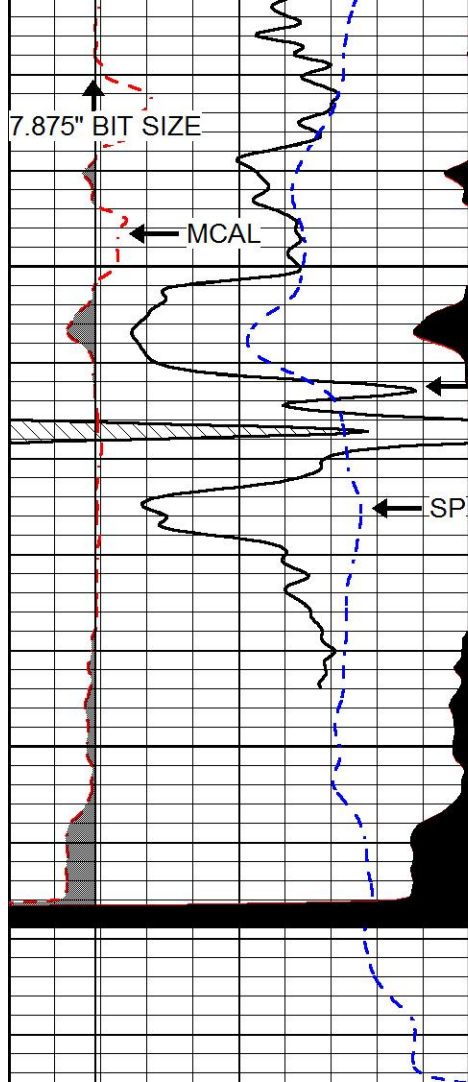
3950

4000

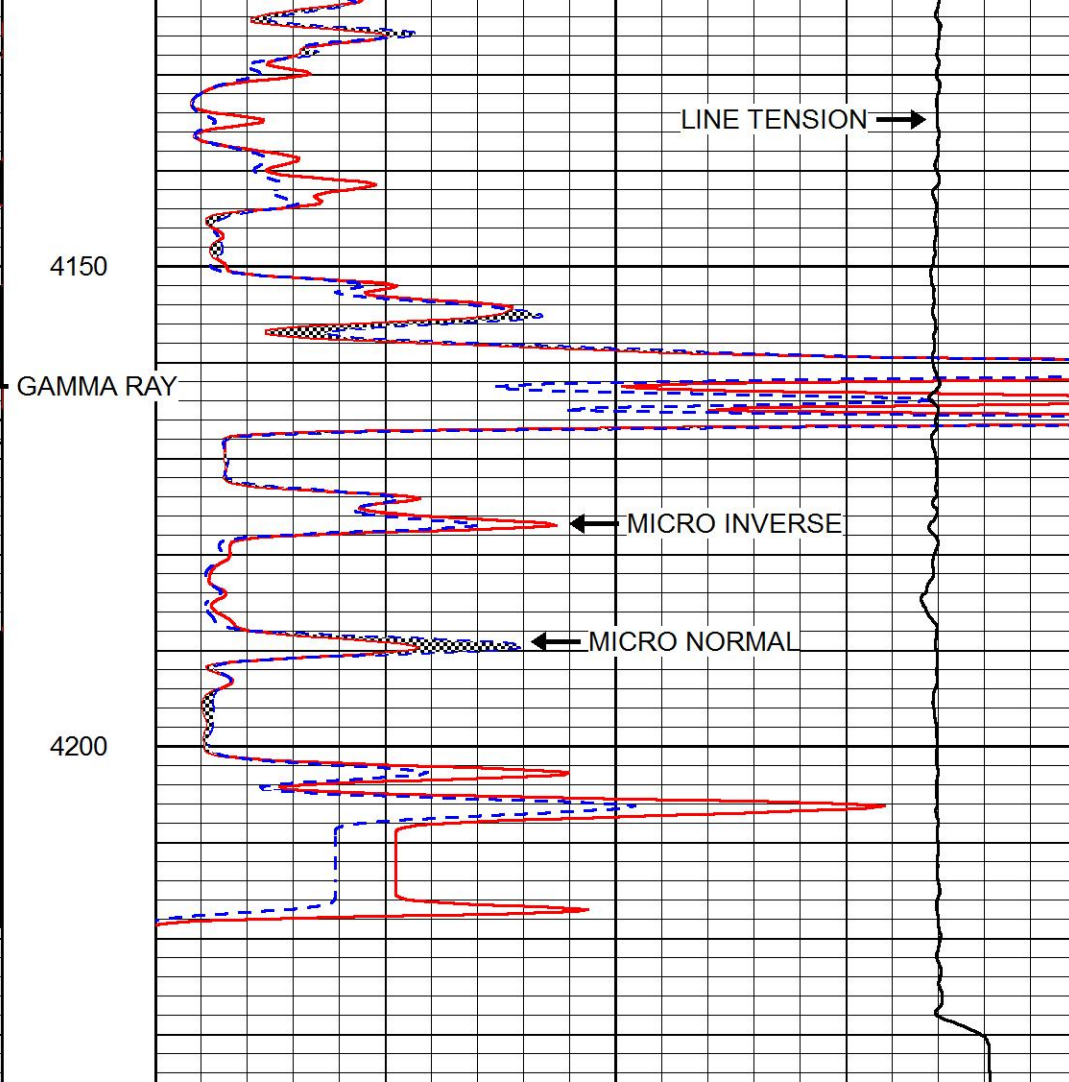
4050

4100





0	Gamma Ray (GAPI)	150
6	MCAL (in)	16
2.875	mcal (in)	7.875
6	Bit Size (in)	16
-200	SP (mV)	0



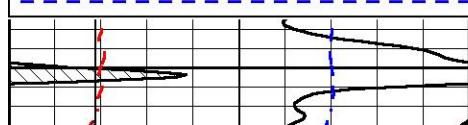
0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0



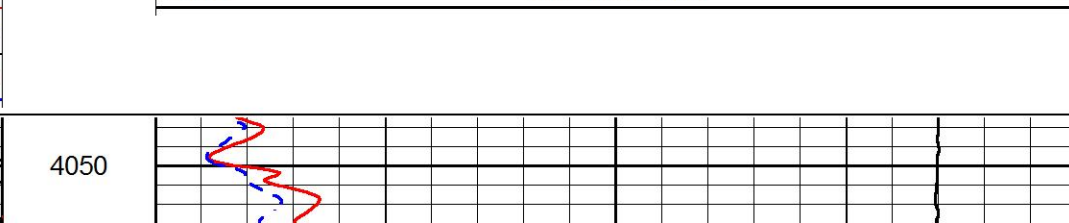
REPEAT SECTION

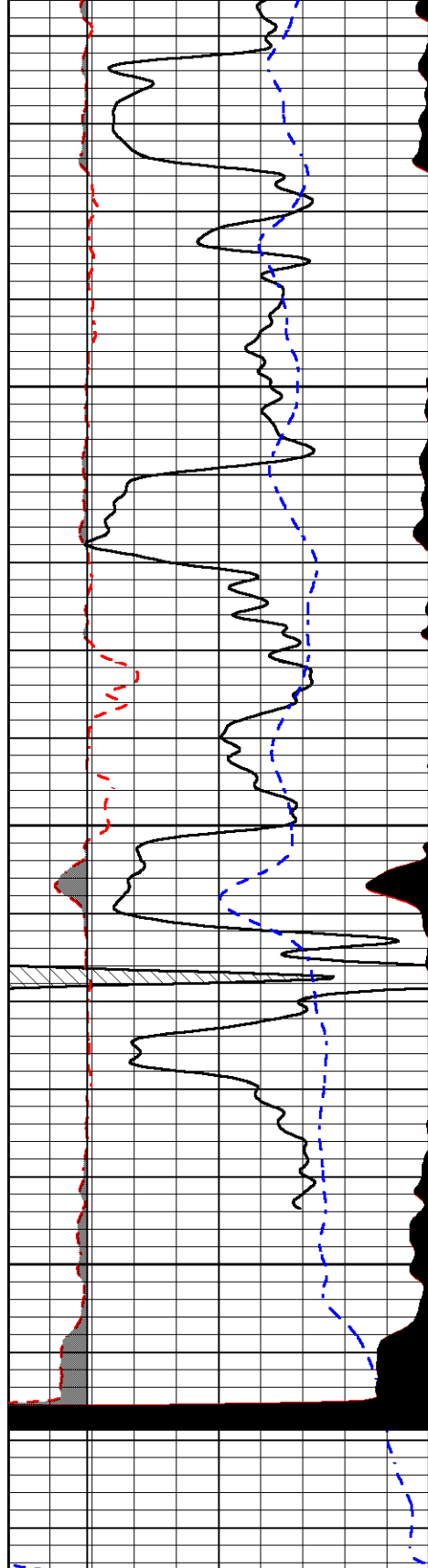
Database File k-t_south of border_1.db
 Dataset Pathname STKML/pass2.1
 Presentation Format micro
 Dataset Creation Tue Apr 18 12:33:40 2017
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	MCAL (in)	16
2.875	mcal (in)	7.875
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
10000	Line Weight (lb)	0



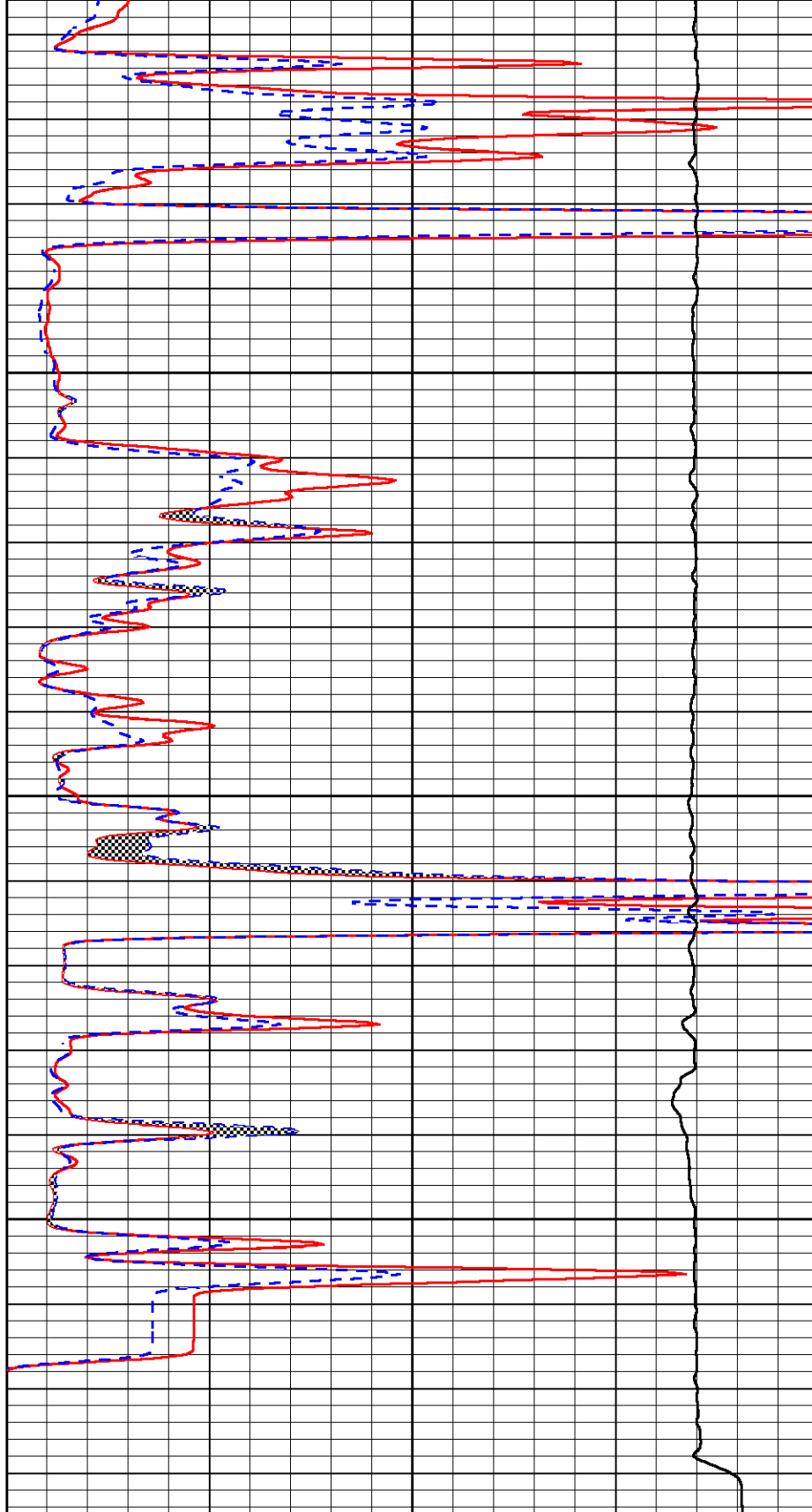


0	Gamma Ray (GAPI)	150
6	MCAL (in)	16
2.875	mcal (in)	7.875
6	Bit Size (in)	16
-200	SP (mV)	0

4100

4150

4200



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

Calibration Report

Database File k-t_south of border_1.db
Dataset Pathname STKMI/pass3.5

Dual Induction Calibration Report							
Serial-Model: Calibration Performed:				PSI 13-M&W Fri Mar 31 18:54:31 2017			
		Readings		References		Results	
Loop:	Air	Loop		Air	Loop	Gain	Offset
Deep	166.796	835.089		0.000	255.800 mmho/m	0.410	-34.000
Medium	142.009	1348.560		0.000	255.800 mmho/m	0.360	-35.000

Microlog Calibration Report							
Serial-Model: Performed:				PSI-01-PSIML Fri Mar 31 18:41:59 2017			
		Readings		References		Results	
	Zero	Cal		Zero	Cal	m	b
Normal	0.0000	1.0000		0.0000	1.0000 Ohm-m	23000.0000	-0.4000
Inverse	0.0000	1.0000		0.0000	1.0000 Ohm-m	26000.0000	-0.4000
Caliper	1.0001	1.1397		6.5000	18.5000 in	70.0000	-65.6000

Compensated Density Calibration Report							
Serial-Model: Source / Verifier: Master Calibration Performed:				90-1031-M&W 16955B / 2ci Fri Mar 31 18:42:23 2017			

Master Calibration							
		Density		Far Detector		Near Detector	
Magnesium		1.755	g/cc	5174.18		6425.27	cps
Aluminum		2.665	g/cc	963.17		4037.42	cps
Spine Angle = 74.55				Density/Spine Ratio = 0.522			
		Size		Reading			
Small Ring		8.00	in	1.84			
Large Ring		22.00	in	1.46			

Compensated Neutron Calibration Report							
Serial Number: Tool Model: Calibration Performed:				207-MW M&W Fri Mar 31 10:30:30 2017			
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					

Tool Model:	M&W
Calibration Performed:	Fri Mar 31 18:42:32 2017

Calibrator Value:	1.0	GAPI
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Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps

Sensitivity:	0.6000	GAPI/cps
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