



PIONEER
Pioneer Energy Services

MICRORESISTIVITY LOG

Company **TDI, INC.**
Well **VIRGINIA #2**
Field **VIRGINIA**
County **ELLIS** State **KANSAS**

Location: API #: 15-051-26878-00-00

1005' FNL & 755' FEL

SEC 16 TWP 15S RGE 19W

Permanent Datum **GROUND LEVEL** Elevation **2009'**
Log Measured From **KELLY BUSHING**
Drilling Measured From **KELLY BUSHING**

Other Services
CNL/CDL
DIL
Elevation
K.B. 2019'
D.F. N/A
G.L. 2009'

Date	7/17/2017		
Run Number	TWO		
Depth Driller	3638'		
Depth Logger	3637'		
Bottom Logged Interval	3636'		
Top Log Interval	2800'		
Casing Driller	8.625" @ 1250'		
Casing Logger	1251'		
Bit Size	7.875"		
Type Fluid in Hole	CHEMICAL		
Salinity, ppm CL	5700		
Density / Viscosity	9.1 52		
pH / Fluid Loss	10.5 6.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.55 @ 80		
Rmt @ Meas. Temp	0.41 @ 80		
Rmc @ Meas. Temp	0.74 @ 80		
Source of Rmt / Rmc	CHARTS		
Rm @ BHT	0.39 @ 112		
Operating Rig Time	3 1/2 HOURS		
Max Rec. Temp. F	112		
Equipment Number	91		
Location	HAYS		
Recorded By	D. SCHMIDT		
Witnessed By	TOM DENNING	HERB DEINES	

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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.

ANTONINO,
2 WEST, 2 SOUTH, 1/8 WEST,
SOUTH 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

Engineer: D. SCHMIDT
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: TOM DENNING
Secondary Witness: HERB DEINES
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	105	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	80	0	5.5	0	3637	112	7.875



Database File

tdi_virginia_2.db

Dataset Pathname

STACK/pass3.1

Presentation Format

micro

Dataset Creation

Mon Jul 17 07:29:27 2017

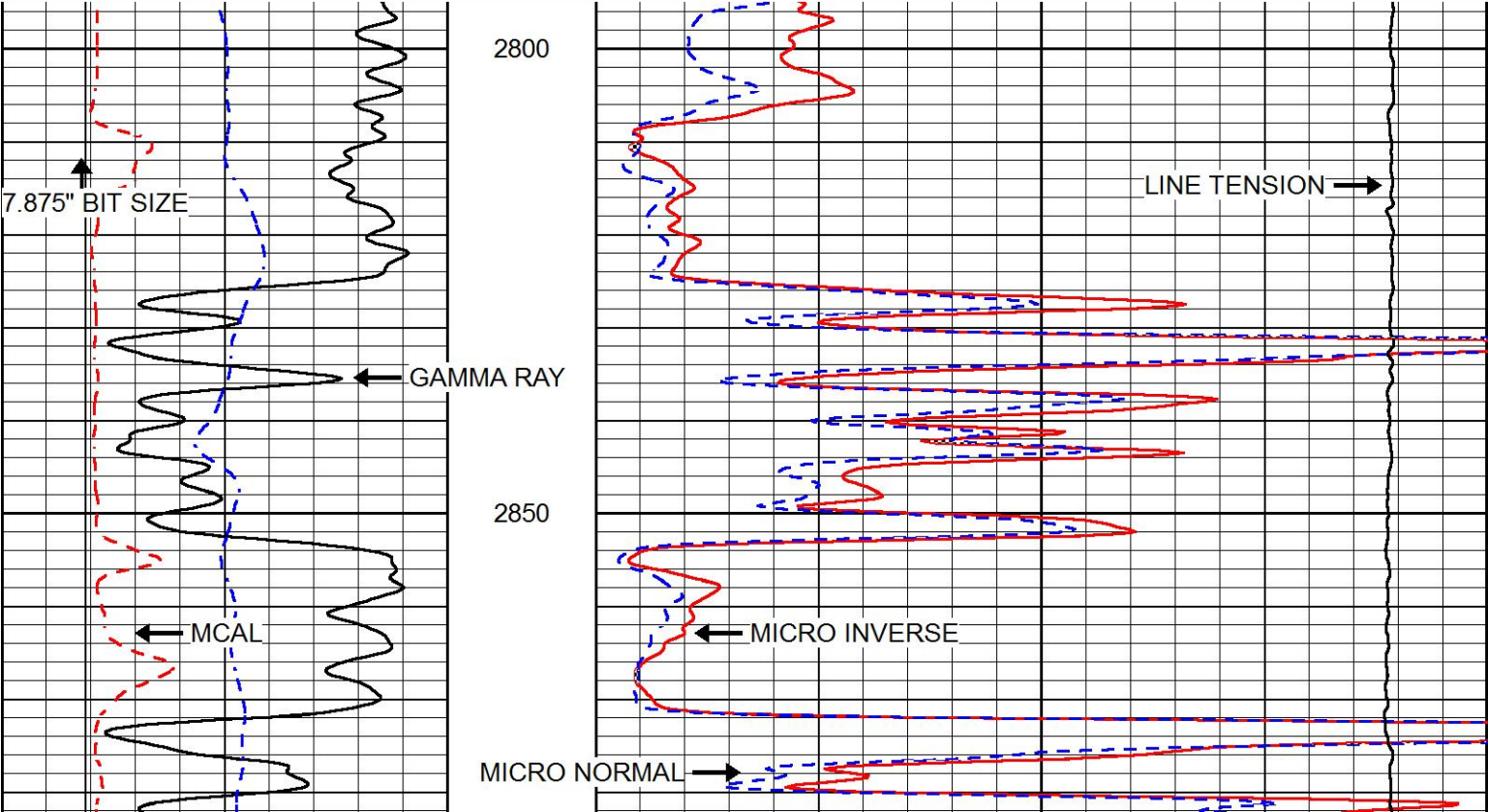
Charted by

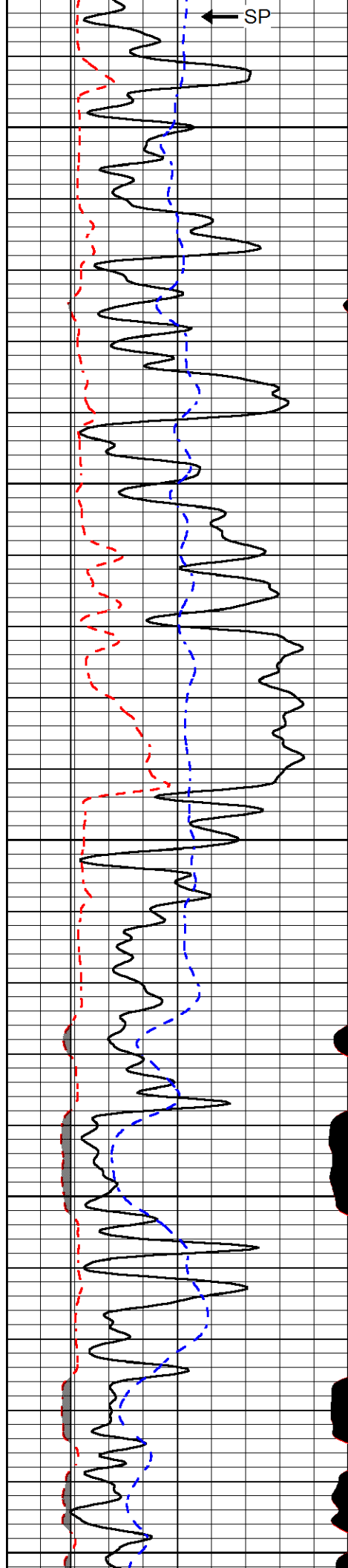
Depth in Feet scaled 1:240

MAIN PASS

0	Gamma Ray (GAPI)	150
6	MCAL (in)	16
2.875	mcals (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





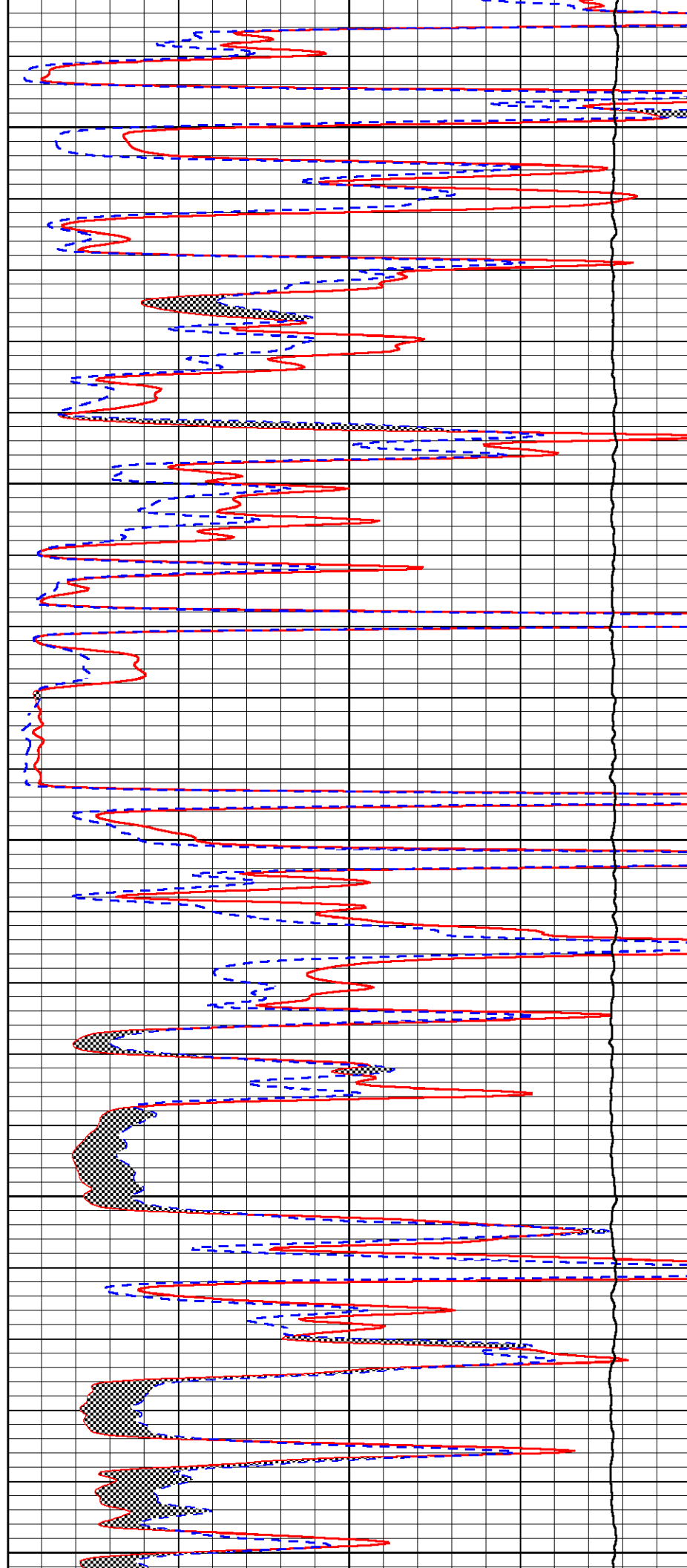
2900

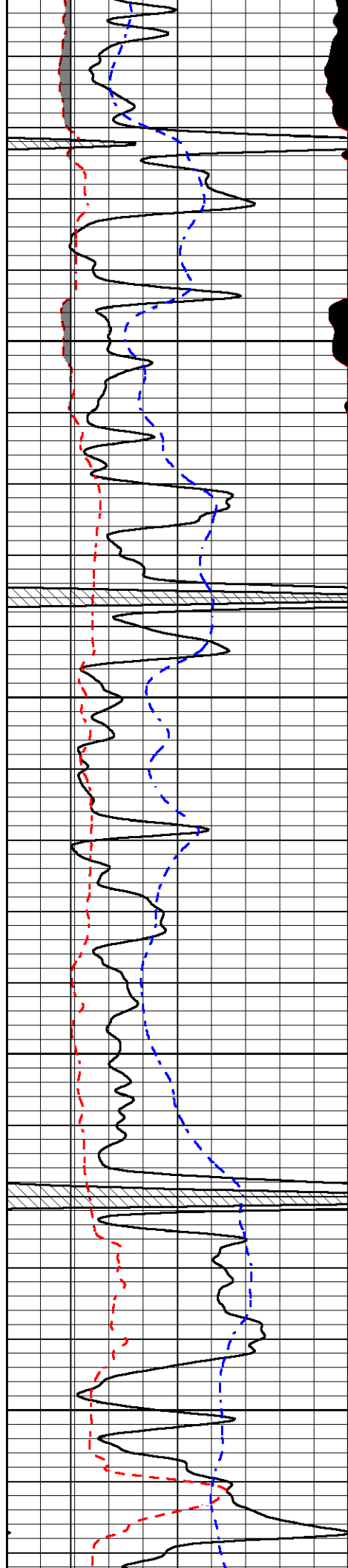
2950

3000

3050

3100



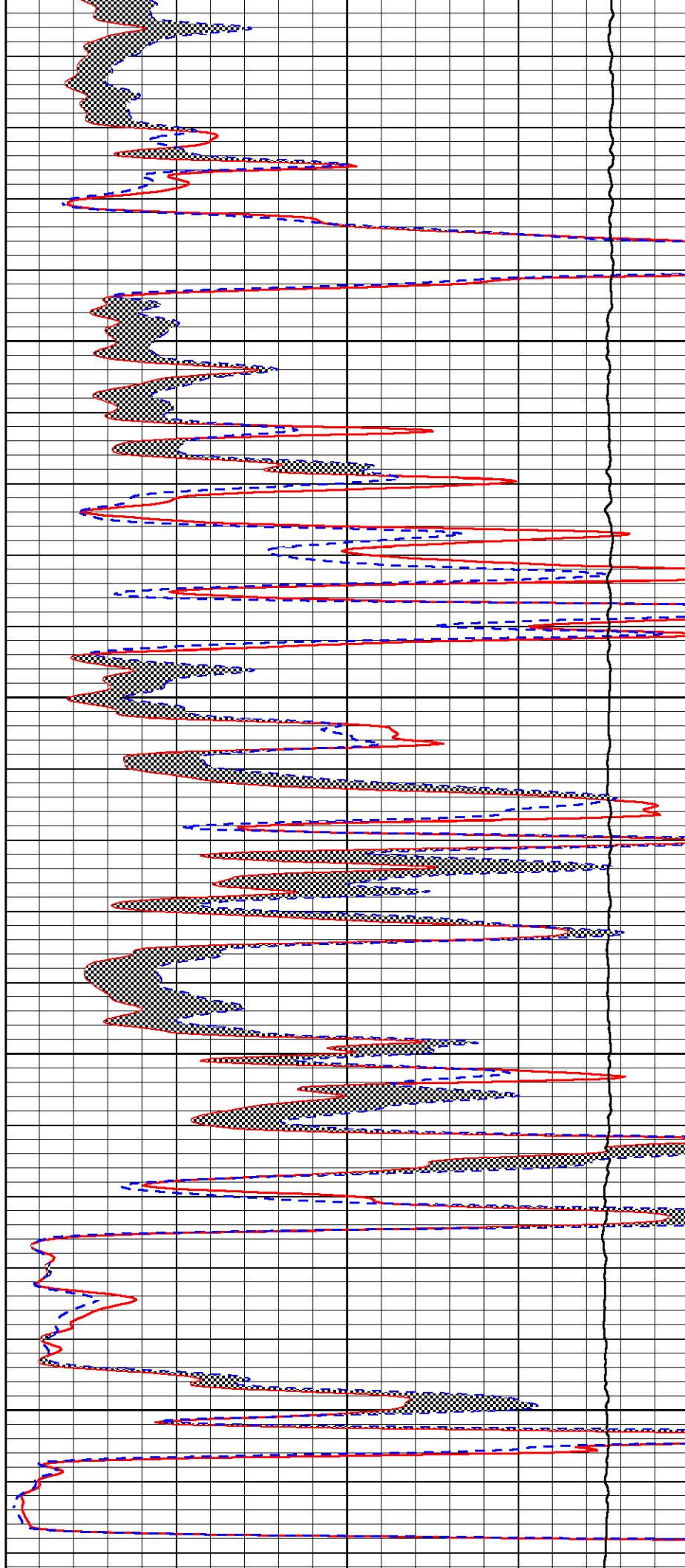


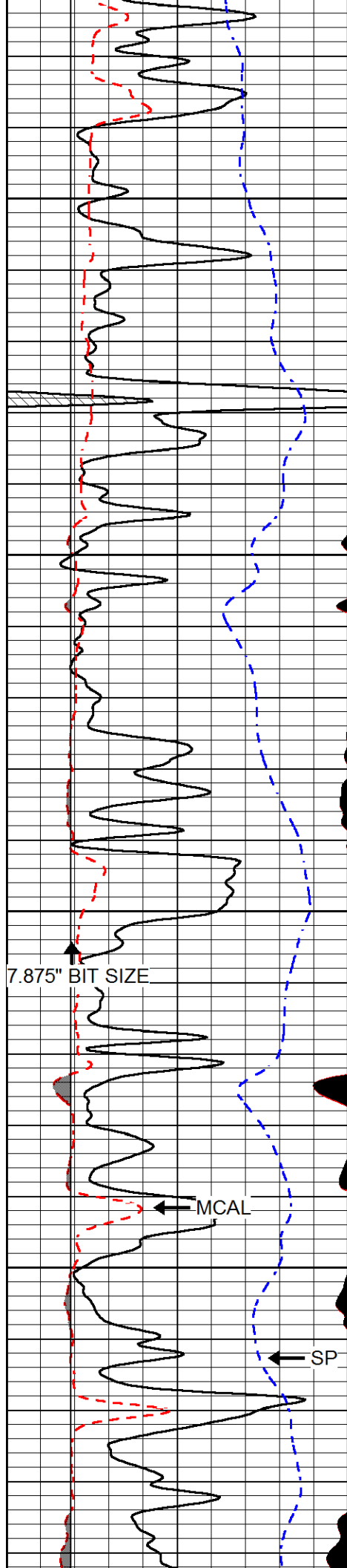
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3200

3250

3300



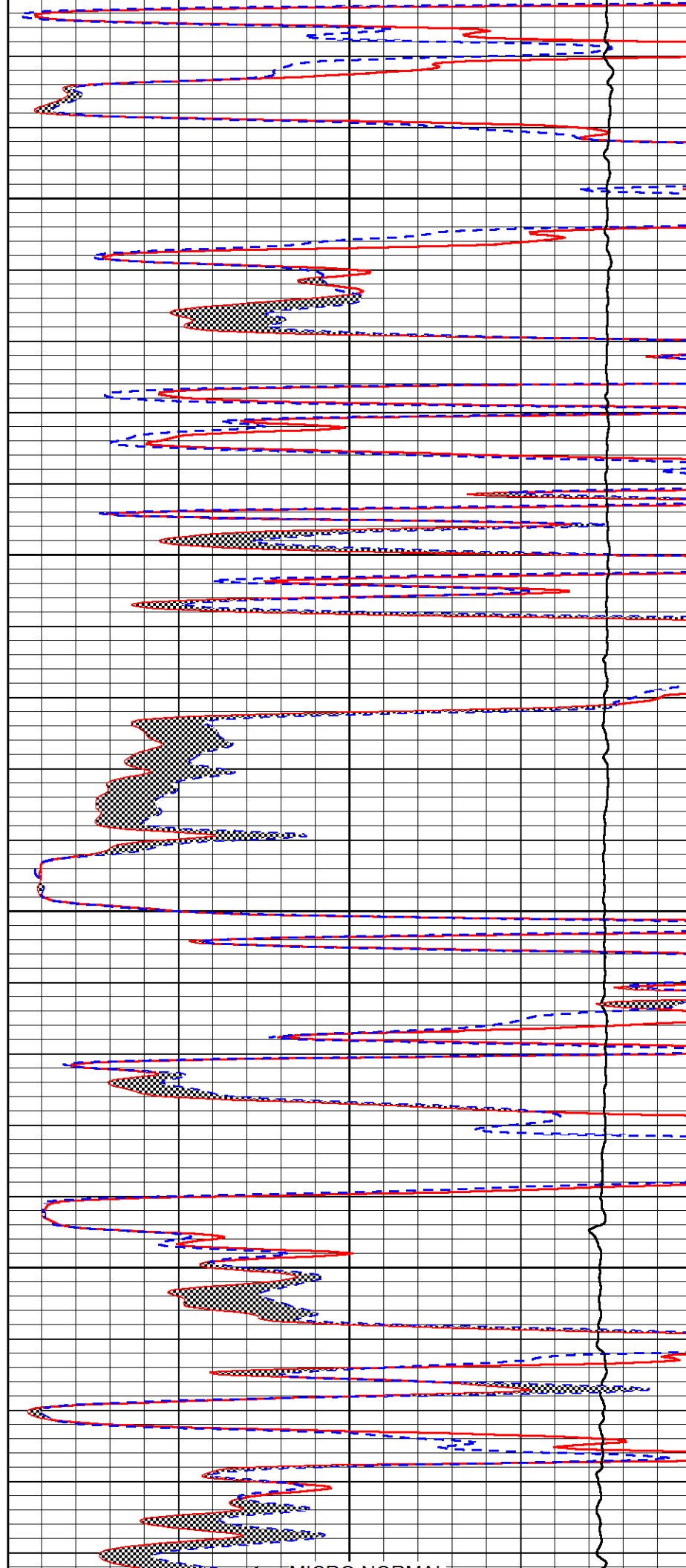


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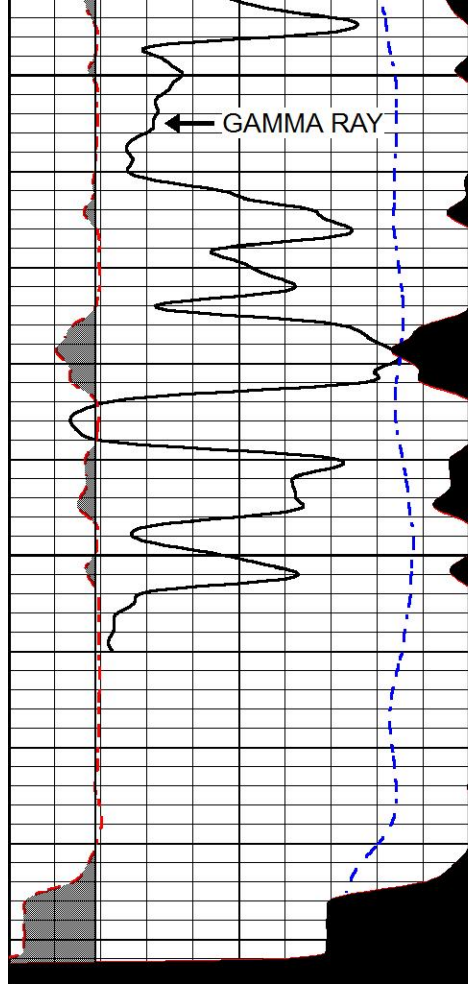
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3450

3500



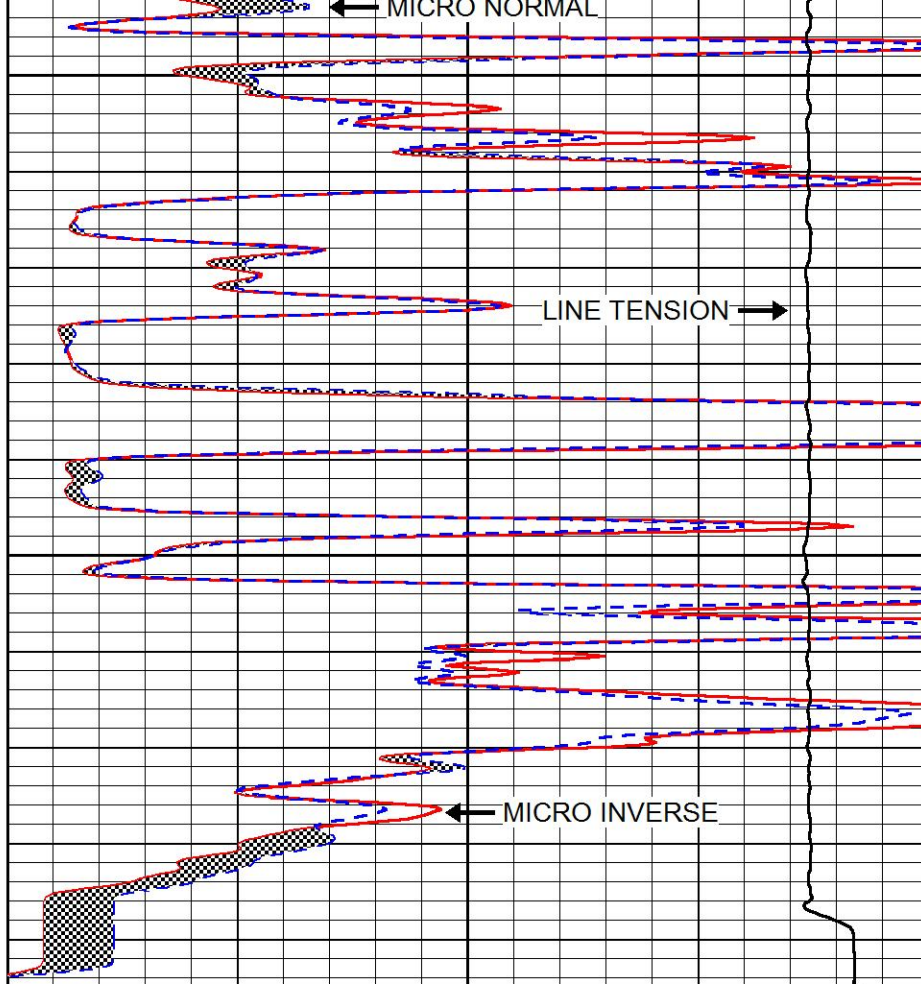
MICRO NORMAL



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

3550

3600



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

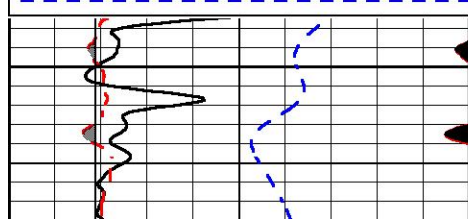


REPEAT SECTION

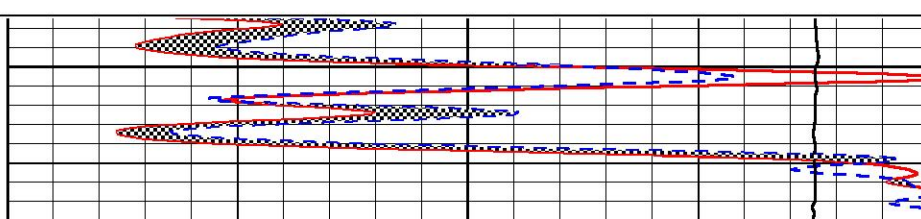
Database File tdi_virginia_2.db
 Dataset Pathname STACK/pass2.4
 Presentation Format micro
 Dataset Creation Mon Jul 17 07:16:41 2017
 Charted by Depth in Feet scaled 1:240

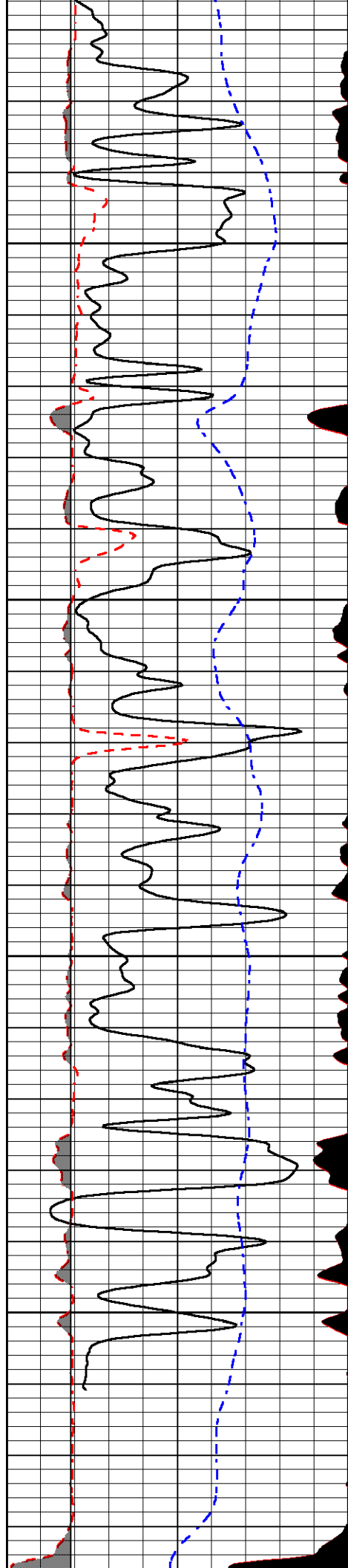
0	Gamma Ray (GAPI)	150
6	MCAL (in)	16
2.875	mcal (in)	7.875
6	Bit Size (in)	16
-200	SP (mV)	0

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



3400



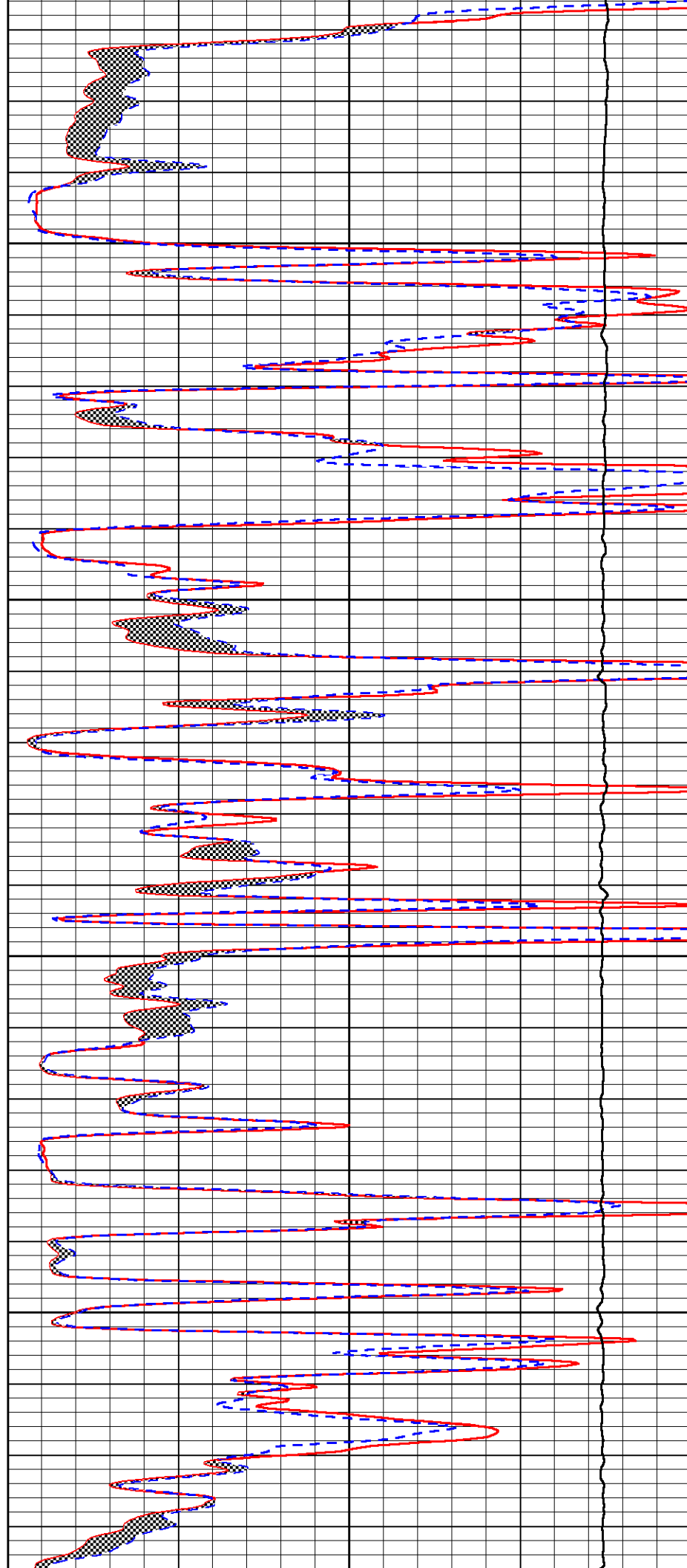


3450

3500

3550

3600



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	mcAl (in)	7.875	10000	Line Weight (lb)	0
6	Bit Size (in)	16			
-200	SP (mV)	0			

Calibration Report	
Database File	tdi_virginia_2.db
Dataset Pathname	STACK/pass3.5
Dataset Creation	Mon Jul 17 07:15:58 2017

Dual Induction Calibration Report

Serial-Model:	PSI 91-M&W
Calibration Performed:	Thu Jul 13 13:00:25 2017

Readings			References			Results	
Loop:	Air	Loop	Air	Loop		Gain	Offset
Deep	166.796	835.089	0.000	255.800	mmho/m	0.430	-32.000
Medium	142.009	1348.560	0.000	255.800	mmho/m	0.360	-31.000

Compensated Density Calibration Report
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Serial-Model:	90-1031-M&W
Source / Verifier:	16955B / 2ci
Master Calibration Performed:	Thu Jul 13 13:00:48 2017

Master Calibration					
	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4903.44	6153.79	cps
Aluminum	2.675	g/cc	934.50	4021.31	cps
Spine Angle = 75.61			Density/Spine Ratio = 0.538		
	Size		Reading		
Small Ring	8.00	in	1.84		
Large Ring	22.00	in	1.46		

Compensated Neutron Calibration Report
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Serial Number:	207-MW
Tool Model:	M&W
Calibration Performed:	Sat Jun 17 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:	Thu Jul 13 13:01:02 2017

Calibrator Value:	1.0	GAPI
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Background Reading:	0.0	cps
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Calibrator Reading:	1.0	cps
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Sensitivity:	0.6000	GAPI/cps
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Company	TDI, INC.
Well	VIRGINIA #2
Field	VIRGINIA
County	ELLIS
State	KANSAS