



PIONEER
Pioneer Energy Services

MICRORESISTIVITY LOG

Company TDI, INC. Well UNREIN #1 Field WILDCAT County ELLIS State KANSAS		Location: API #: 15-051-26920-00-00 625' FSL & 565' FEL SEC 29 TWP 14S RGE 17W Permanent Datum GROUND LEVEL Elevation 1926' Log Measured From KELLY BUSHING Drilling Measured From KELLY BUSHING Other Services CNL/CDL DIL Elevation K.B. 1936' D.F. N/A G.L. 1926'	
Date	7/26/2018		
Run Number	ONE		
Depth Driller	3550'		
Depth Logger	3548'		
Bottom Logged Interval	3547'		
Top Log Interval	2800'		
Casing Driller	8.625" @ 1106'		
Casing Logger	1104'		
Bit Size	7.875"		
Type Fluid in Hole	CHEMICAL		
Salinity, ppm CL	6200		
Density / Viscosity	9.0 65		
pH / Fluid Loss	11.0 6.4		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.20 @ 79		
Rmt @ Meas. Temp	0.15 @ 79		
Rmc @ Meas. Temp	0.27 @ 79		
Source of Rmt / Rmc	CHARTS		
Rm @ BHT	0.14 @ 112		
Operating Rig Time	3 HOURS		
Max Rec. Temp. F	112		
Equipment Number	91		
Location	HAYS		
Recorded By	IAN MABB		
Witnessed By	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.
MUNJOR, KS.
2 MILES EAST, 1 MILE SOUTH AND WEST INTO

Log Measured From: KELLY BUSHING 10 Ft. Above Permanent Datum

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

Your Pioneer Energy Services Crew

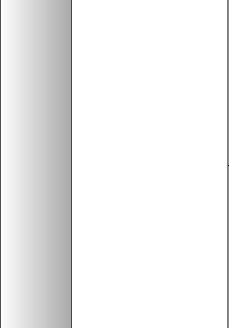
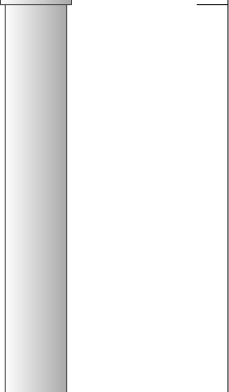
Engineer: IAN MABB
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: HERB DEINES
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	-6	2
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	73	0	5.5	0	3548	112	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 (817-947)	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					

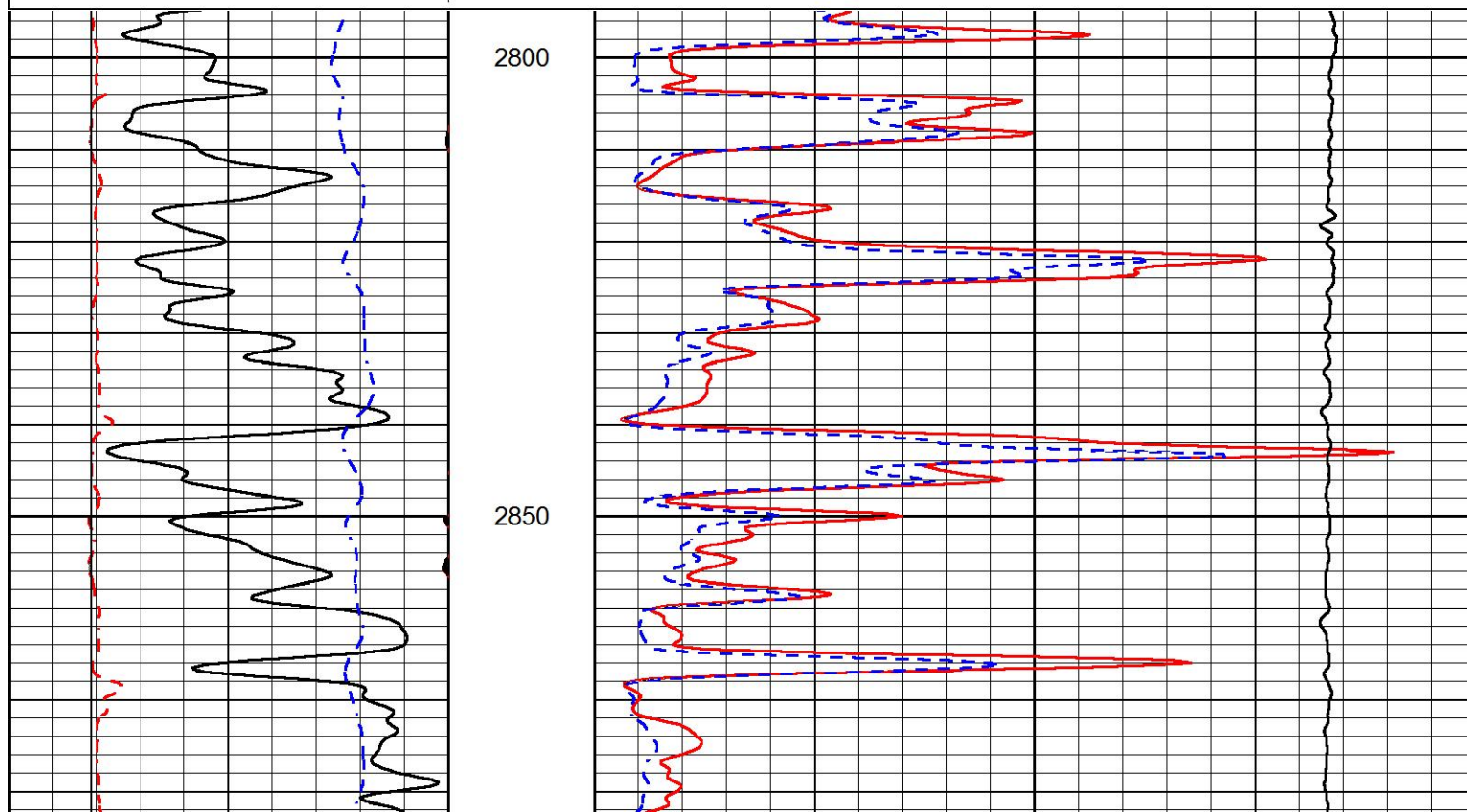
		DIL-PSI HIGH TEMP (933 (HT))		18.50	3.50	220.00
CILD	8.00					
CILM	4.70					
SP	0.20					
Dataset: tdi_unrein_1.db: field/well/stackmel/pass3.1 Total length: 43.08 ft Total weight: 685.00 lb O.D.: 4.00 in						

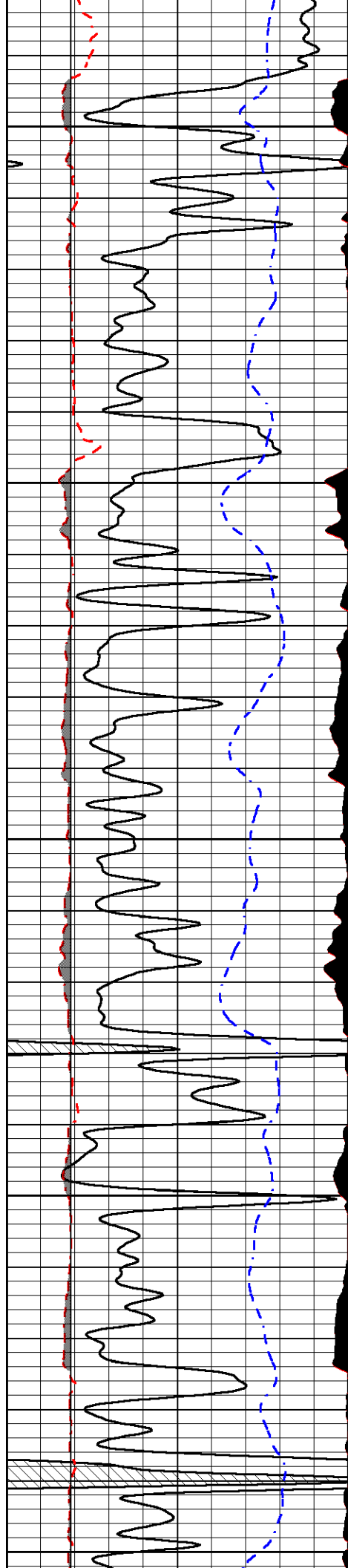


MAIN PASS

Database File	tdi_unrein_1.db
Dataset Pathname	stackmel/pass3.2
Presentation Format	micro
Dataset Creation	Fri Jul 27 00:20:34 2018
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			





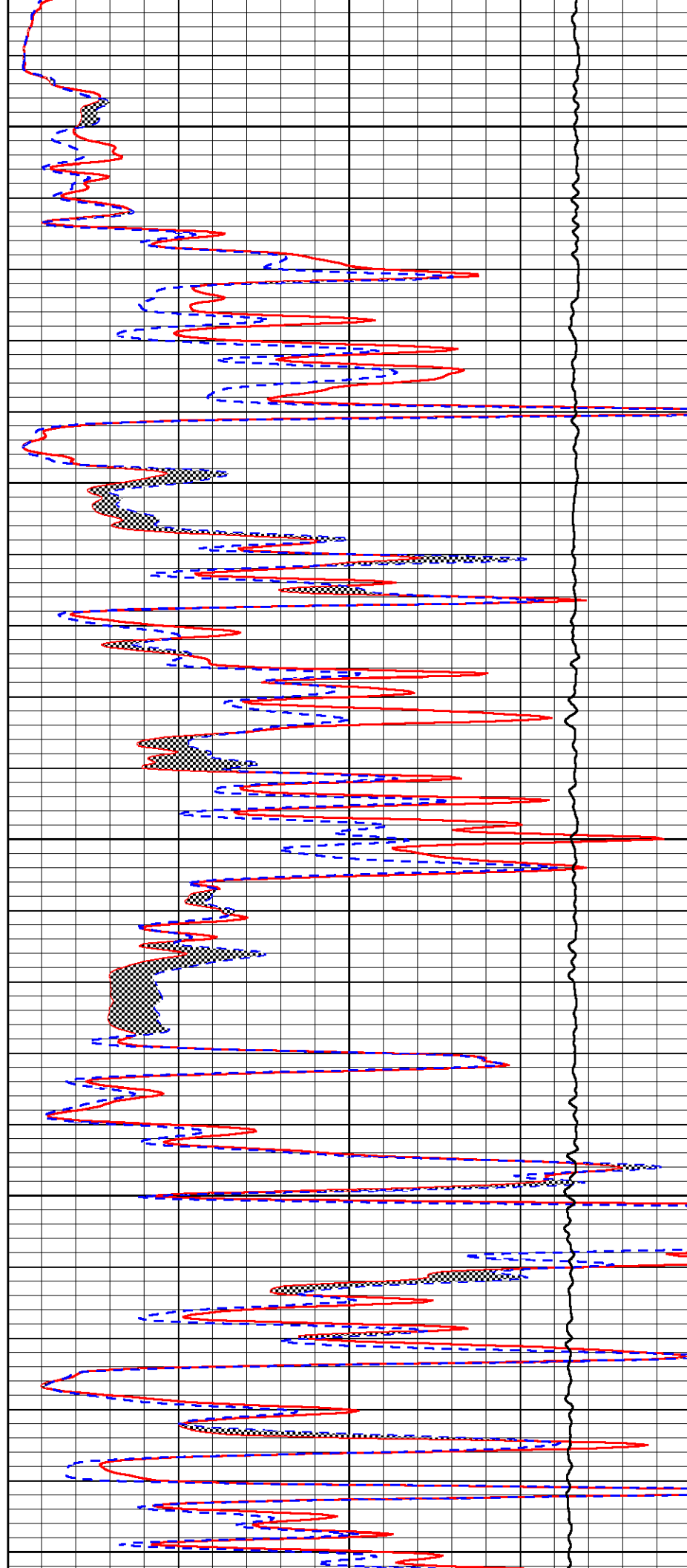
2900

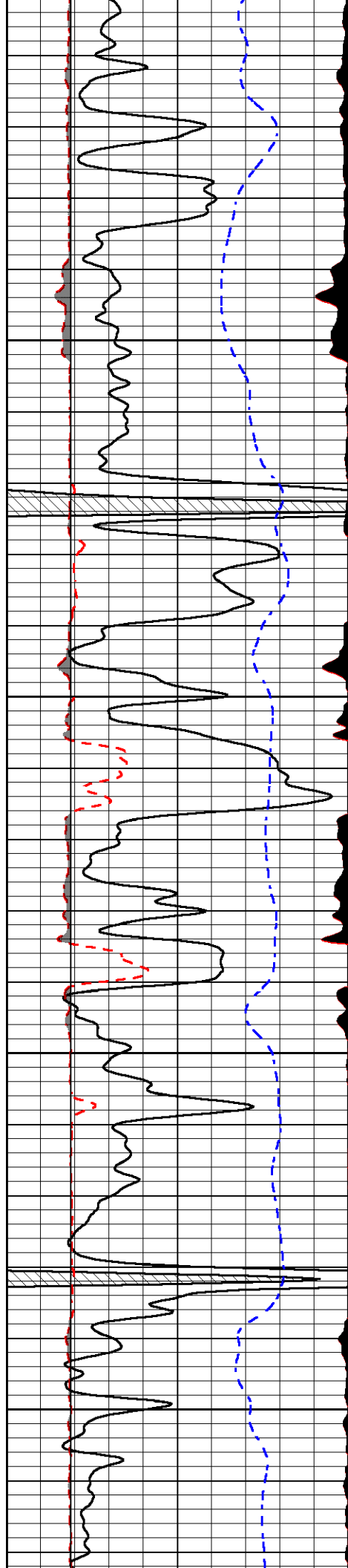
2950

3000

3050

3100



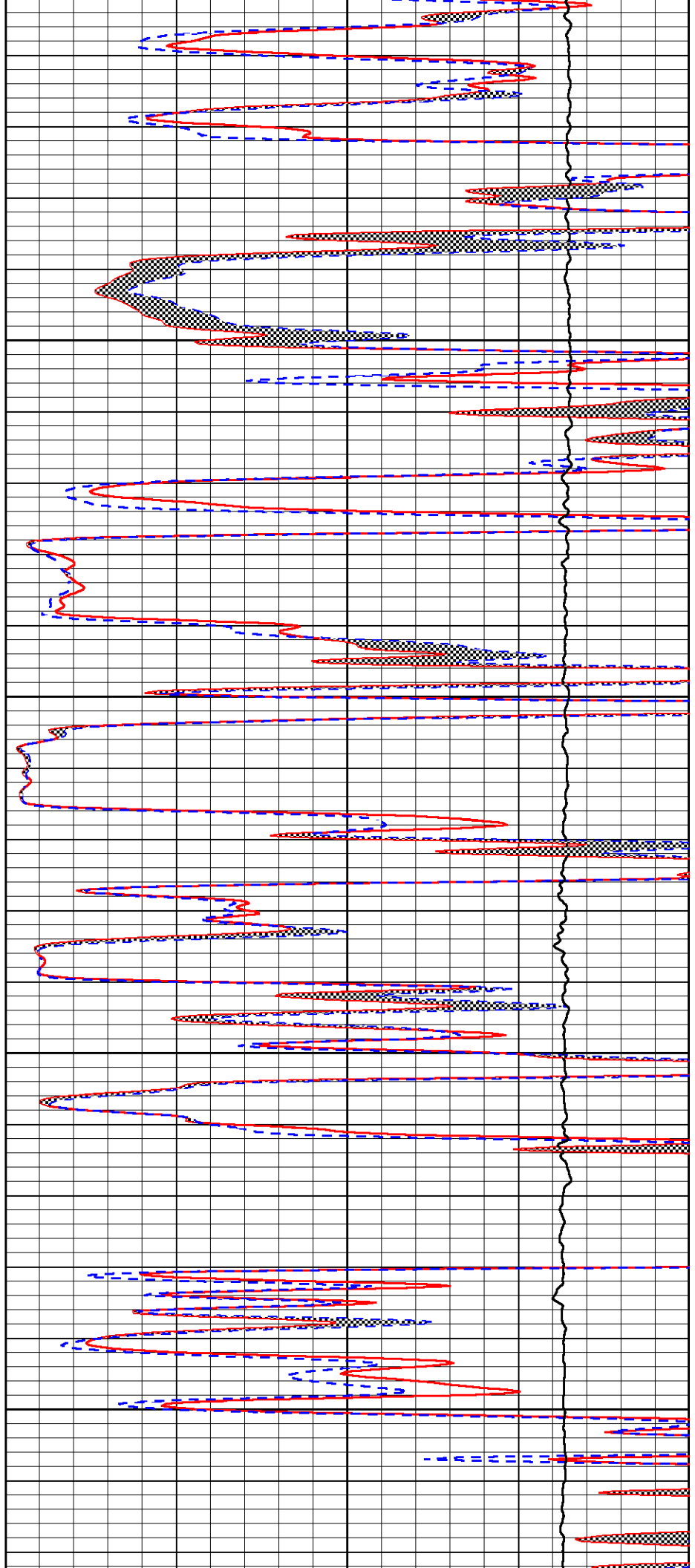


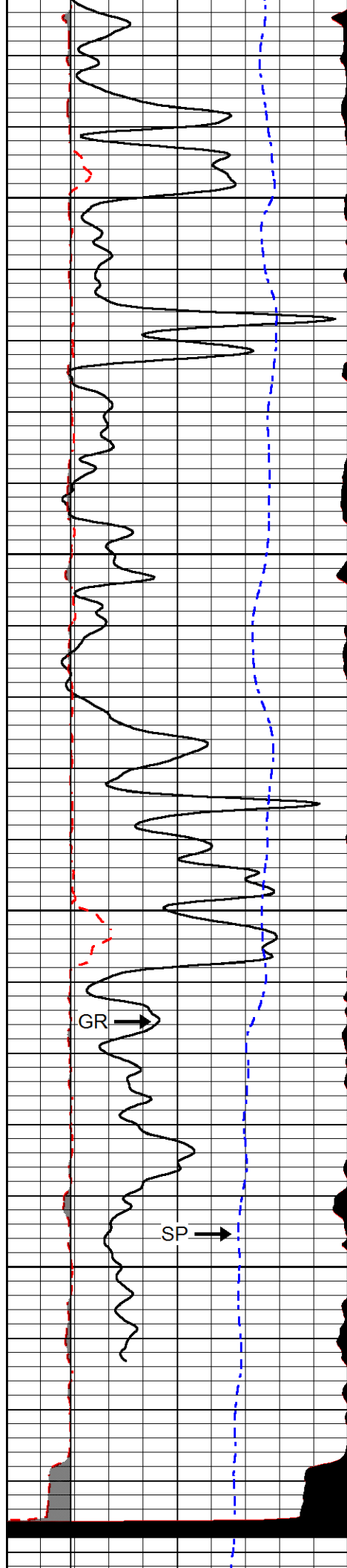
3150

3200

3250

3300





3350

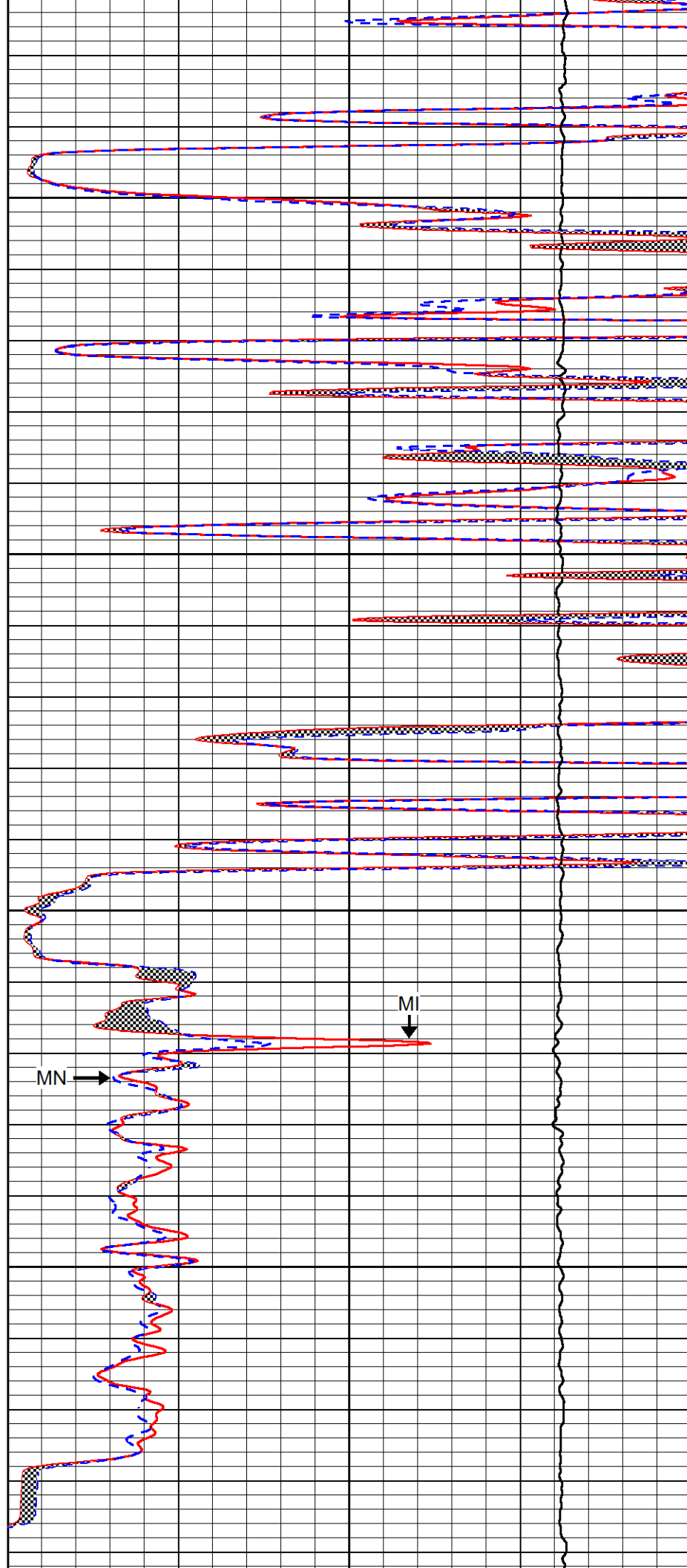
3400

3450

3500

GR

SP



MN

MI

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

0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
10000	Line Weight (lb)	0

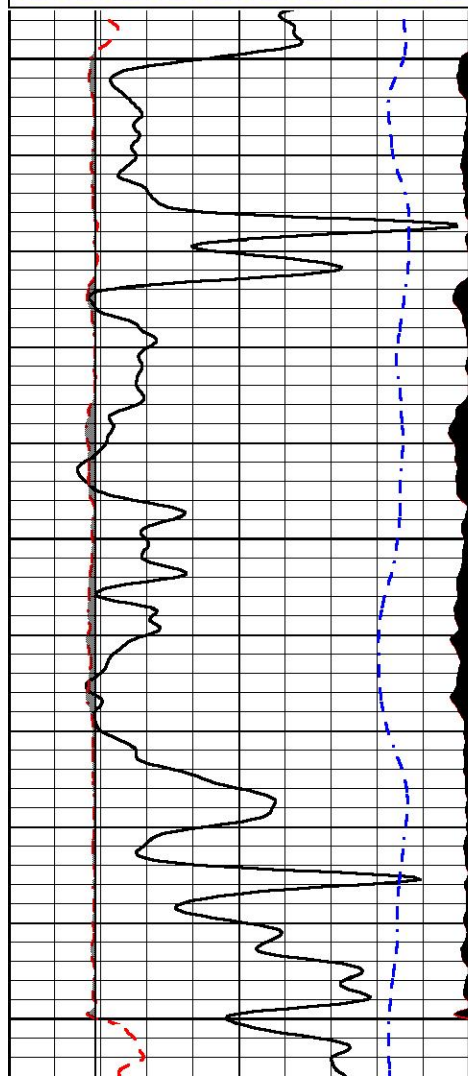


REPEAT SECTION

Database File tdi_unrein_1.db
 Dataset Pathname stackmel/pass2.1
 Presentation Format micro
 Dataset Creation Fri Jul 27 00:37:39 2018
 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

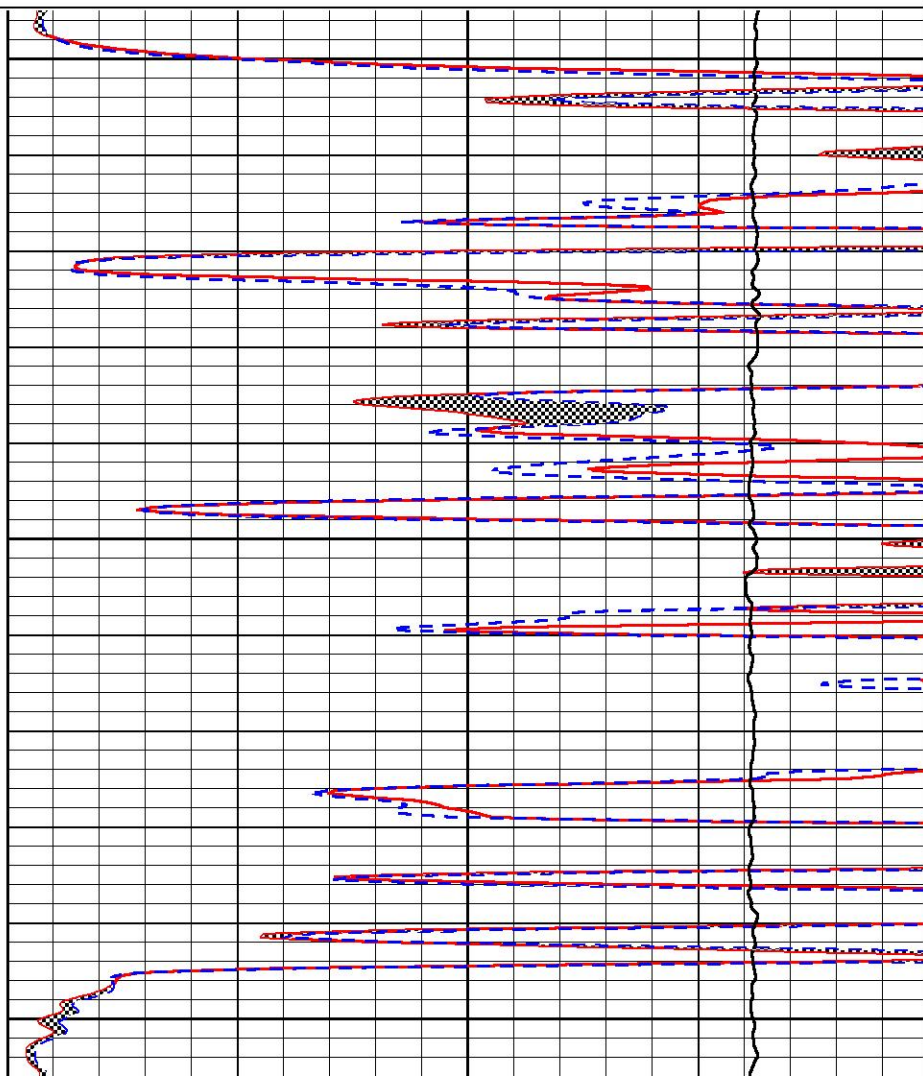
0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
10000	Line Weight (lb)	0

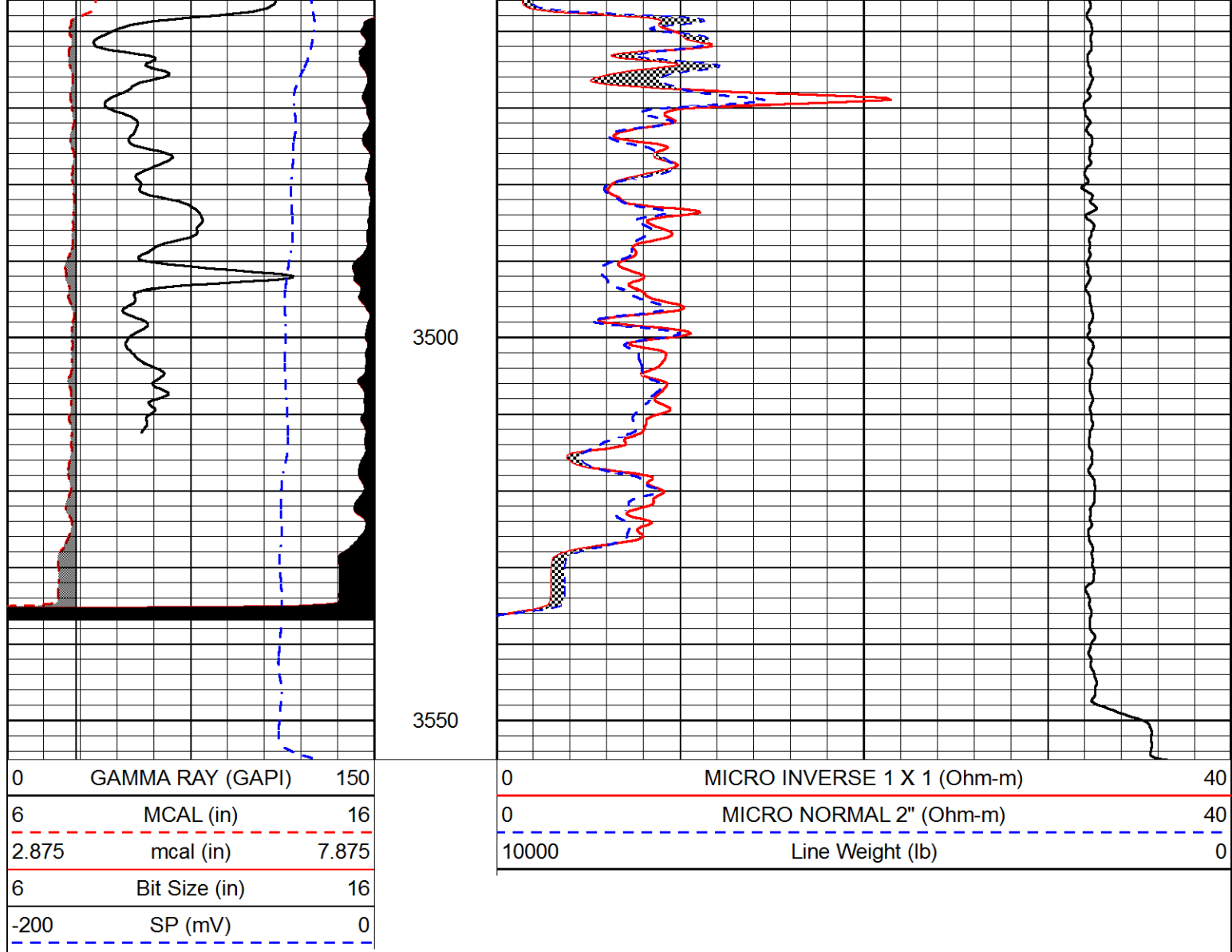


3350

3400

3450





Calibration Report							
Database File	tdi_unrein_1.db						
Dataset Pathname	stackmel/pass3.1						
Dataset Creation	Thu Jul 26 23:48:56 2018						
Dual Induction Calibration Report							
Serial-Model:		933 (HT)-PSI HIGH TEMP					
Calibration Performed:		Sun Jul 15 05:36:29 2018					
Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
	Deep	167.000 835.000	0.000	255.000	mmho/m	0.700	-17.000
	Medium	142.000 1349.000	0.000	255.000	mmho/m	0.565	-60.500
Microlog Calibration Report							
Serial-Model:		PSI-01-PSIML					
Performed:		Sun Jul 15 07:40:28 2018					
	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b

Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	27000.0000	-0.8000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	30000.0000	-0.6000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-65.8500

Compensated Density Calibration Report

Serial-Model:	817-947-M&W
Source / Verifier:	16955B / 2ci
Master Calibration Performed:	Sun Jul 15 05:36:52 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	6127.15	5922.31	cps
Aluminum	2.670	g/cc	1141.85	3762.09	cps
Spine Angle = 74.89			Density/Spine Ratio = 0.526		
	Size		Reading		
Small Ring	4.50	in	1.02		
Large Ring	15.00	in	1.15		

Compensated Neutron Calibration Report

Serial Number:	207-MW
Tool Model:	M&W
Calibration Performed:	SUN JUL 15 10:30:30 2018

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:	Sun Jul 15 05:37:08 2018
Calibrator Value:	1.0 GAPI
Background Reading:	0.0 cps
Calibrator Reading:	1.0 cps
Sensitivity:	0.6000 GAPI/cps



Company	TDI, INC.
Well	UNREIN #1
Field	WILDCAT
County	ELLIS
State	KANSAS