PIONEER
Pioneer Energy Services

MICRORESISTIVITY LOG

Company RJM COMPANY
Well SPRAWKA NO. 1
Field TRITSCH
County BARTON State KANSAS

Location: API #: 15-009-26197-00-00
2310' FNL & 330' FWL
SEC 12 TWP 18S RGE 12W

Other Services: CNL/CDL, DIL

Elevation: K.B. 1856', D.F. N/A, G.L. 1848'

Permanent Datum: GROUND LEVEL Elevation 1848'
Log Measured From: KELLY BUSHING
Drilling Measured From: KELLY BUSHING

CompanyRJM COMPANY
Well SPRAWKA NO. 1
Field TRITSCH
County BARTON
State KANSAS

Date	1/18/2018		
Run Number	ONE		
Depth Driller	3409'		
Depth Logger	3408'		
Bottom Logged Interval	3407'		
Top Log Interval	2800'		
Casing Driller	8.625" @ 370'		
Casing Logger	369'		
Bit Size	7.875"		
Type Fluid in Hole	CHEMICAL		
Salinity,ppm CL	5000		
Density / Viscosity	9.1 / 48		
pH / Fluid Loss	10.0 / 9.2		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.75 @ 56		
Rmf @ Meas. Temp	.56 @ 56		
Rmc @ Meas. Temp	1.01 @ 56		
Source of Rmf / Rmc	CHARTS		
Rm @ BHT	.38 @ 110		
Operating Rig Time	3 HOURS		
Max Rec. Temp. F	110 DEG/F		
Equipment Number	108		
Location	HAYS		
Recorded By	J. HENRICKSON		
Witnessed By	JIM MUSGROVE		

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Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

CLAFLIN KANSAS
4 WEST TO 90 RD, 1 1/2 SOUTH, EAST INTO

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

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

Your Pioneer Energy Services Crew	This Log Record Was Witnessed By
Engineer: J. HENRICKSON	Primary Witness: JIM MUSGROVE
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\rjm_sprawka_1.db
Dataset field/well/stackml/pass3.1/_vars_

Top - 3352.00 ft

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	110	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	-220	21	Off	3408

3352.00 ft - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	110	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	-220	21	Off	3408

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	37.48		CNT-M&W (tk10-MW)	5.50	3.50	100.00
CNSSC	36.73					
			CDL-M&W (168-986)	8.50	4.00	250.00
LSD	28.43					
DCAL	28.42					
SSD	27.93					
			ML-PSI STKBL ML (PSI-02) Stackable Microlog Tools	7.58	4.00	65.00
MCAL	19.83					
MI	19.83					
MN	19.83					
RLL3	15.80					
RLL3F	15.79					

		DIL-M&W (PSI 978)	18.50	3.50	220.00
CILD	8.00				
CILM	4.70				
SP	0.20				

Dataset:	rjm_sprawka_1.db: field/well/stackml/pass3.1
Total length:	43.08 ft
Total weight:	685.00 lb
O.D.:	4.00 in

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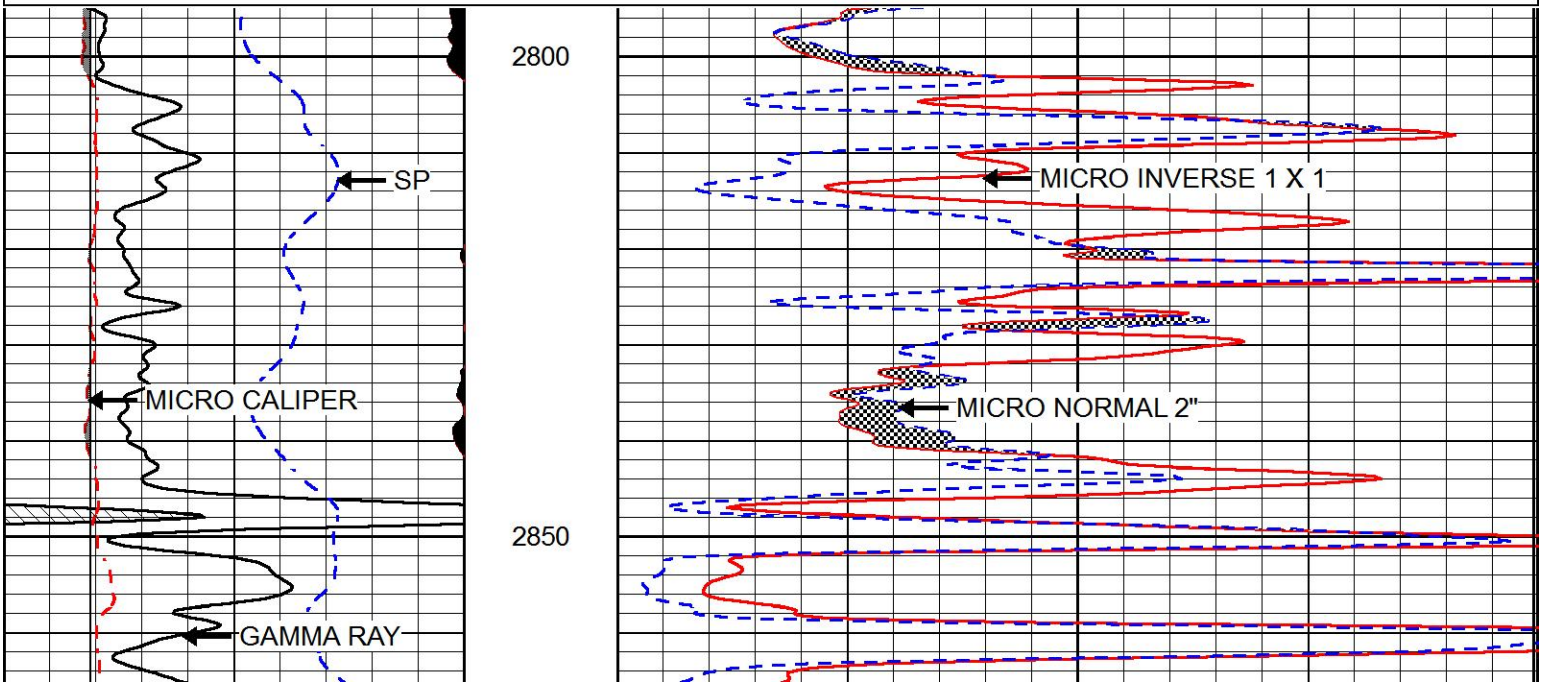
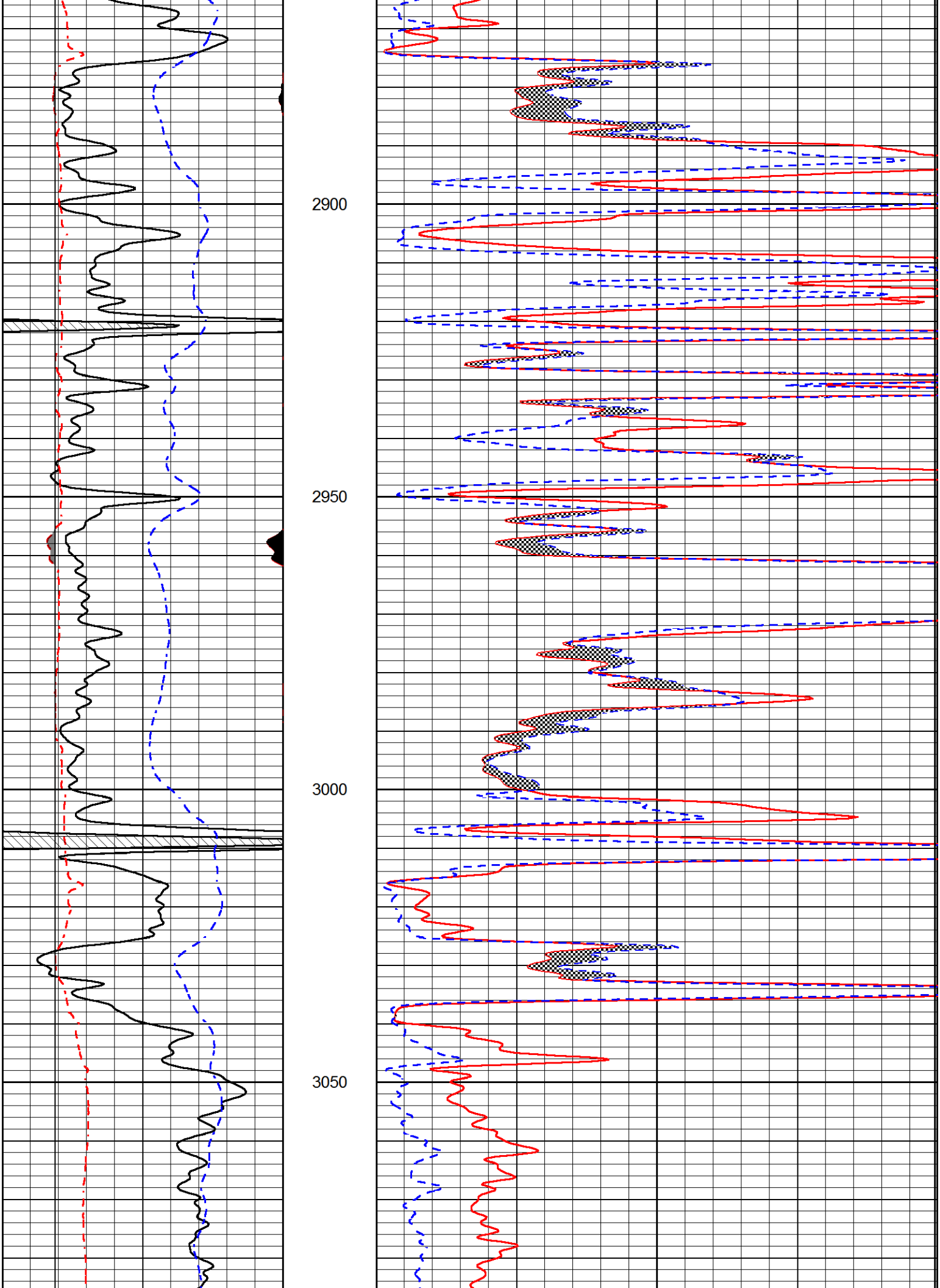
MAIN PASS

Database File	rjm_sprawka_1.db
Dataset Pathname	stackml/pass3.1
Presentation Format	micro
Dataset Creation	Thu Jan 18 08:38:17 2018
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

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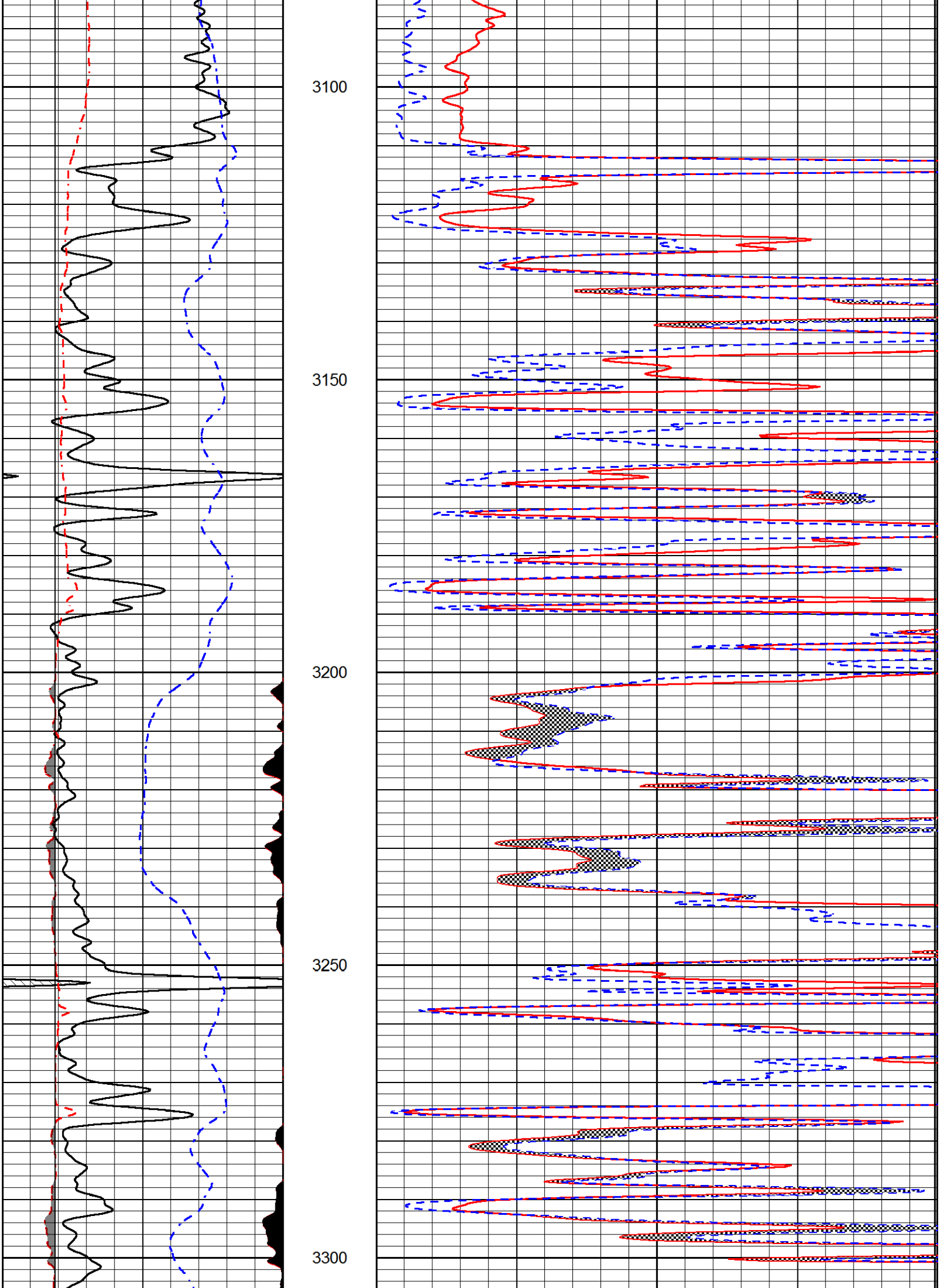
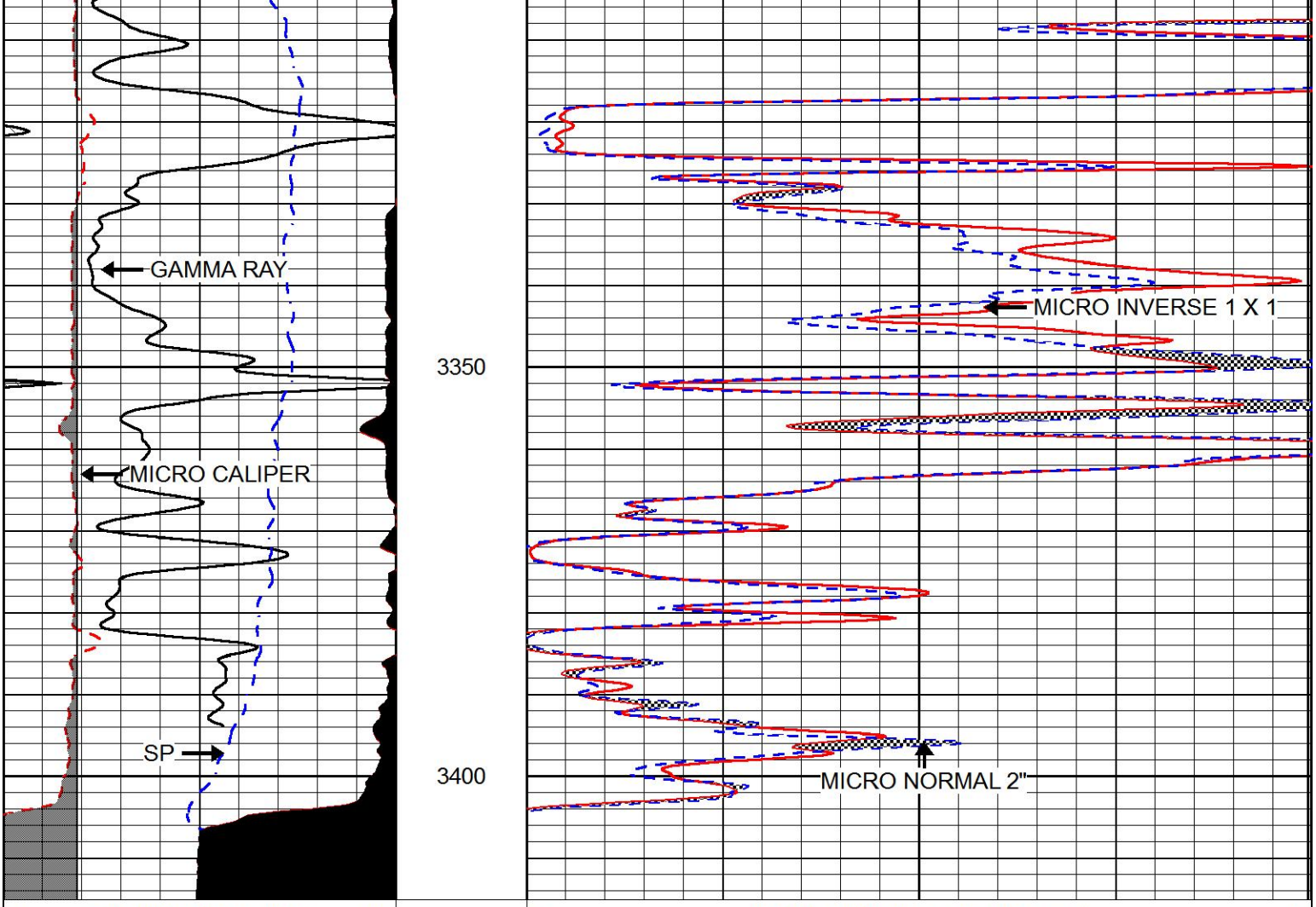
2950
3000
3050


3100
3150
3200
3250
3300



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

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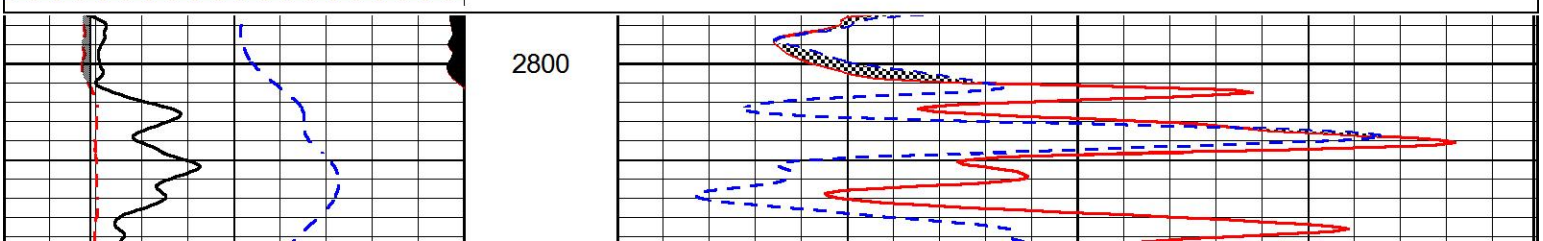
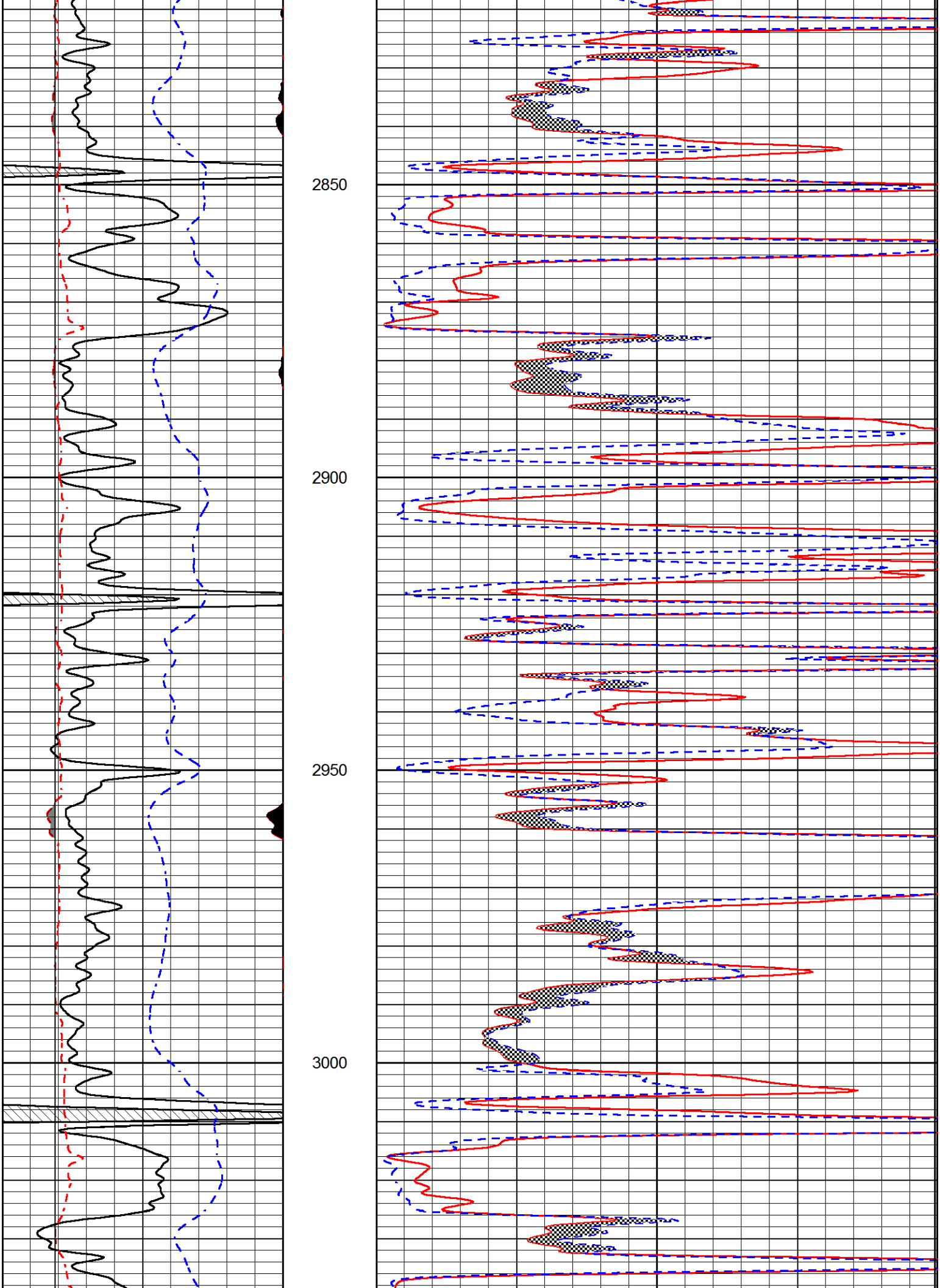
REPEAT SECTION

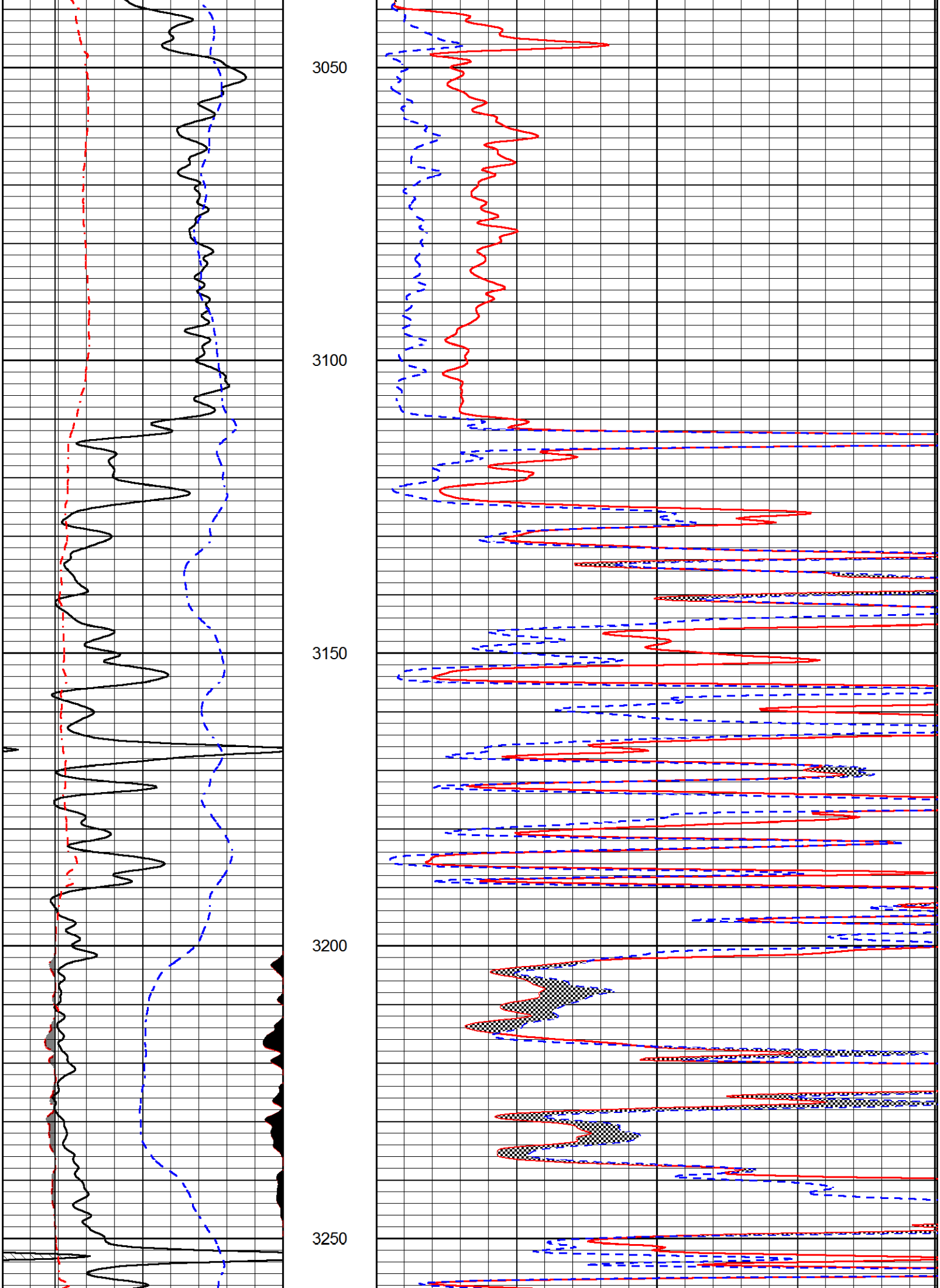
Database File	rjm_sprawka_1.db
Dataset Pathname	stackml/pass2.1
Presentation Format	micro
Dataset Creation	Thu Jan 18 08:38:41 2018
Charted by	Depth in Feet scaled 1:240

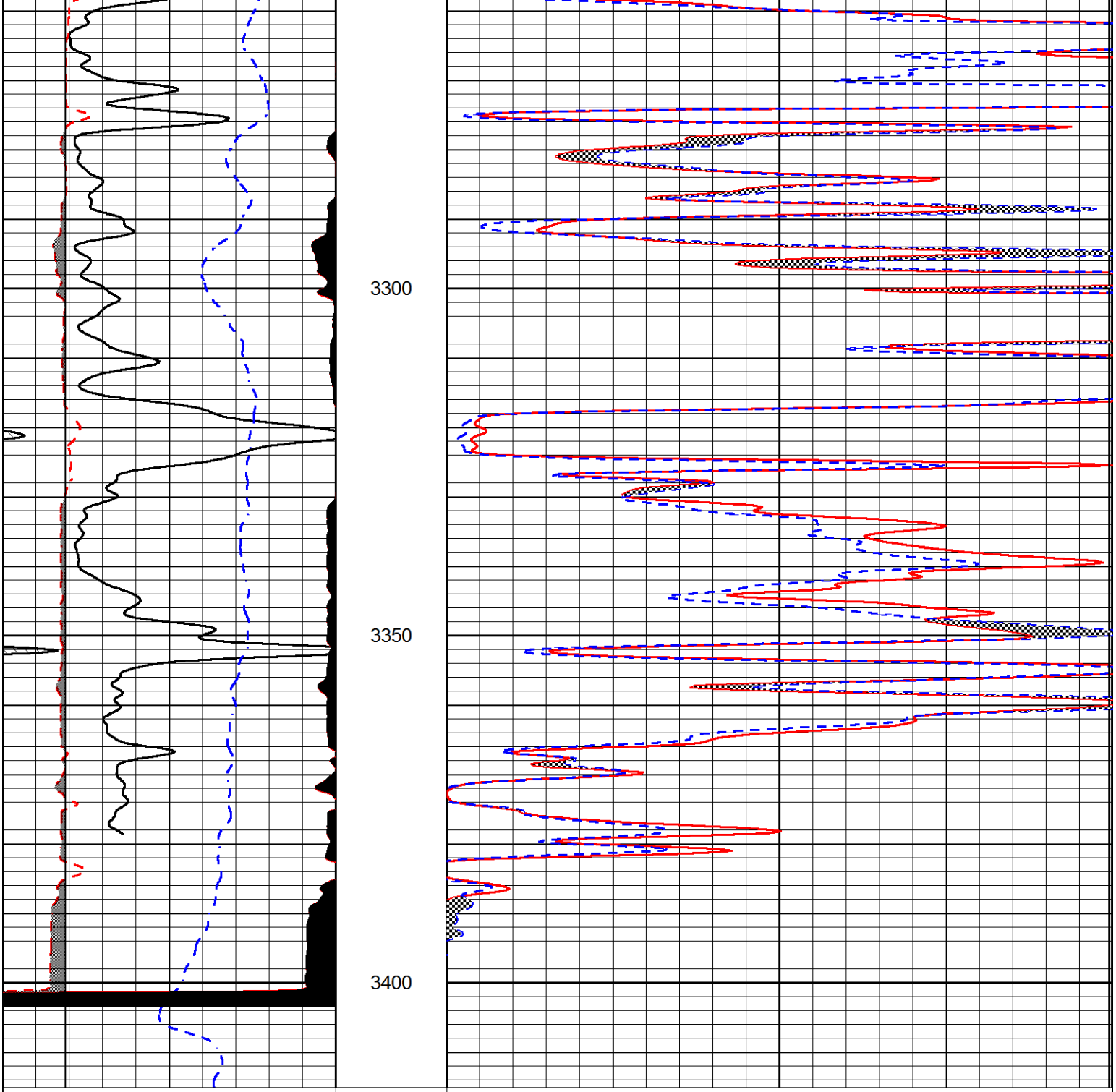
0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

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




2850
2900
2950
3000


3050
3100
3150
3200
3250



Calibration Report

Database File	rjm_sprawka_1.db
Dataset Pathname	stackml/pass3.1
Dataset Creation	Thu Jan 18 08:38:17 2018

Dual Induction Calibration Report

Serial-Model:	PSI 978-M&W
Calibration Performed:	Wed Dec 13 12:45:09 2017

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.570	-36.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.400	-35.000

Microlog Calibration Report

Serial-Model: PSI-02-PSI STKBL ML
Performed: Fri Jun 23 01:25:19 2017

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	13000.0000	0.0000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	15000.0000	-0.3000
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-131.6500

Compensated Density Calibration Report

Serial-Model: 168-986-M&W
Source / Verifier: /
Master Calibration Performed: Tue Apr 11 17:07:47 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.705	g/cc	859.57	3020.22	cps

Spine Angle = 74.61 Density/Spine Ratio = 0.540

	Size		Reading
Small Ring	4.00	in	1.00
Large Ring	14.00	in	1.20

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 17:08:01 2017

Calibrator Value: 1000.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 6.2 cps

Sensitivity: 0.5200 GAPI/cps

Sensitivity:	0.5200	GAPI/cps

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Well	SPRAWKA NO. 1
Field	TRITSCH
County	BARTON
State	KANSAS